TEACHER PERCEPTION OF PROFESSIONAL AUTONOMY
UNDER VARYING CONDITIONS OF NEGOTIATIONS
IN ARIZONA, CALIFORNIA, AND NEVADA

by

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I hereby recommend that this dissertation prepared under my direction by Merlyn Lee Sarber entitled Teacher Perceptions of Professional Autonomy Under Varying Conditions of Negotiations in Arizona, California, and Nevada be accepted as fulfilling the dissertation requirement for the degree of Doctor of Philosophy.

Dissertation Director 3/10/77

Date

As members of the Final Examination Committee, we certify that we have read this dissertation and agree that it may be presented for final defense.

Final approval and acceptance of this dissertation is contingent on the candidate's adequate performance and defense thereof at the final oral examination.
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ABSTRACT

This descriptive study investigated teacher perceptions of professional autonomy. Professional autonomy was defined through the use of four factors: independence, status, self-governance, and responsibility. The purpose of the study was to determine whether there were significant differences in teacher perceptions of professional autonomy in three states with differing collective negotiation statutes and/or no statutes, and whether these perceptions were related to the length of time negotiation has been practiced under a particular statute.

A random sample of 1,040 teachers was taken from the three states of Arizona, California, and Nevada. These states were chosen because they differ in both explicitness of negotiations statute in education and in elapsed time since enactment of the applicable statute. Arizona has no current statute and no elapsed time. California, at the time of data collection, had 10 years experience in negotiation under the rather inexplicit Winston Act. Nevada had been negotiating for three years under the more explicit Local Government Employee-Management Relations Act.

A survey questionnaire was distributed to 1,040 tenured teachers from 62 districts. Districts of distribution were randomly selected from strata defined by state, size of district,
and urban or rural location. There was a 60% return rate on the
survey questionnaire.

A treatment by blocks design was used to structure the study. Analysis of variance (ANOVA) and t-test statistics were
used to compare the variables. The main variables of state stat­
ute and elapsed time since passage of statute were supplemented by
the following demographic variables: (1) employment of teacher in
an urban or rural setting; (2) size of district where the teacher
was employed; (3) sex of teacher; (4) age of teacher; (5) elemen­
tary (K-8) or secondary (9-12) work assignment; (6) length of
time employed in the present district; (7) teaching salary as pri­
mary or secondary source of familial income; (8) professional or­
ganization to which teacher belongs; (9) amount of course work in
educational administration completed by the teacher; and (10)
whether the teacher had participated in formal training in nego­
tiation theory or method.

The results of the study showed that teachers in Califor­
nia had significantly higher perceptions of how much professional
autonomy they should have and how much they presently have than
did teachers in Arizona or Nevada. This conclusion appeared to be
related to elapsed time since passage of legislation authorizing
collective negotiation in a state's educational system. Califor­
nia had functioned under a collective negotiations statute for 10
years at the time of collection of data. Nevada had its statute
for three years at the time and Arizona did not have a statute.
Results of the study did not support the idea that statute differences might significantly affect teacher perceptions of professional autonomy. Differences between Arizona with no statute and Nevada with an explicit statute were not pronounced.

Of the 10 demographic variables, only level of assignment was found to show significance establishing it as a variable of concern. There was a constancy of secondary teachers perceiving higher levels of professional autonomy factors than elementary teachers. This finding may be due to differences in staffing, administration and operation of secondary and elementary schools rather than to negotiation elements. This difference between elementary and secondary teachers did not reflect any state groupings.

The conclusions of this study were: (1) the length of time a state has been under a collective negotiation law for teachers is related to teacher perceptions of professional autonomy; and (2) elementary and secondary teachers view professional autonomy factors differently.

Recommendations were made for further study. Implications were discussed and related to the design and conclusions of the study.
CHAPTER 1

INTRODUCTION

Negotiation between teachers and school district managements has been of importance in establishing employment contracts in education for the past 20 years. During this period, the establishment of contracts by collective action has grown through legislation and practice. State legislation governing collective negotiation for teachers is now the rule rather than the exception. Since the early 1960's a majority of states have enacted legislation giving legal status to the right of teachers to bargain collectively. Lieberman (1971, p. 214) stated: "By 1971, approximately 70% of the nation's teachers were covered by collective agreements." In 1975 more than a million and a half teachers were covered by collective negotiation agreements (Donley 1976). Most of these teachers work in states which have collective negotiation statutes that apply to teachers.

Collective negotiation legislation has been constantly sought by teachers and other public employee organizations. Gerhart (1972, p. 131), in a discussion of the scope of bargaining, made some pertinent observations: "Variations in public policy [specifically, the legislation pertaining to unionization in the public sector] have their primary impact on the real scope
of bargaining, and it appears that a well developed public policy is related to a larger scope of bargaining." Gerhart (1972, p. 132) continued by saying: "It is possible that unions in states without explicit policy have a greater tendency to trade depth for breadth."

One result of the teacher's view of the scope of bargaining has been the inclusion of "professional" items in teacher demands. Lutz and Iannaccone (1969, p. 80) commented on the conflicts involved in the scope of bargaining as follows:

The present conflict between school boards and administrators on the one side, and teacher groups on the other, concerns cognitive space . . . . The act of defending cognitive territory of an abstract nature is a human phenomena. Usually, the encroachment is of prerogatives, rights and beliefs of the group rather than of physical territory . . . . School boards and administrators have always kept policy making as their prerogative. Recently teacher groups have infringed upon the boundaries of this cognitive space, and boards and administrators have been attempting to defend the boundary.

Dimock (1970), Carlton and Goodwin (1969), and Perry and Wildman (1970), also supported this view of conflict. Administrators and school boards often view "professional" demands of teacher groups as infringements upon the rights of management to make decisions. Lutz and Iannaccone (1969), Etzioni (1969), Leggat (1970), and Weinberg (1974) discussed the idea that a certain amount of encroachment upon administrative prerogative is necessary in order for a profession to develop autonomy.

Conflict in education often occurs over the negotiation of items such as establishment of goals and procedures,
curriculum development, and academic freedom. Scheduling and "tracking" of students and teachers, pupil discipline, and many other curricular and extra-curricular activities that form major interactions between schooling and the individual student also are points for conflict (Stinnett 1968, Perry and Wildman 1970, and Lieberman 1970).

Teachers have been increasingly concerned with their autonomy as professionals, and tend to use the power granted by collective negotiation statutes to bargain for professional items. Teachers in states with a statute as a base for negotiation could be expected to have a different perception of professional autonomy than teachers in states where no negotiation statute applicable to teachers exists.

The existence of legislation and the length of time since enactment of legislation could affect teacher perceptions of professional autonomy.

Purpose

The purpose of this study was to determine whether there were significant differences in teacher perceptions of professional autonomy in three states with differing collective negotiation statutes and/or no statutes, and whether these perceptions were affected by the length of time negotiation has been practiced under a particular statute.
Statement of the Problem

This study investigated selected variables that might be expected to affect the manner in which teachers perceive their autonomy as professionals. The following questions lent direction to the study:

1. Are there significant differences in the perceptions of professional autonomy of teachers working under statutes authorizing collective negotiation as compared with teachers working under no such statutes?

2. Does the length of time since passage of statutes authorizing collective negotiation affect teacher perceptions of professional autonomy?

3. Are there significant differences in the perceived professional autonomy of teachers when the following variables are examined?
   a. Employment in an urban or rural setting.
   b. Size of the district where the teacher is employed.
   c. Sex of the teacher.
   d. Age of the teacher.
   e. Work assignment: elementary (K-8) or secondary (9-12).
   f. Length of time employed in the same district.
   g. Teaching salary as the primary or secondary source of family income.
h. Professional organization to which the teacher belongs.

i. Amount of academic coursework in Education Administration completed by the teacher.

j. Whether the teacher has had formal training in theory or methods of negotiation.

Significance

The need for studies concerning professional autonomy as an outcome of collective negotiation conditions is documented by the virtual absence of such work. Studies exist that relate collective negotiation conditions to salary and other tangible benefits (Sproul 1969, Thornton 1971, and Smith 1972). A few studies, such as Lawler (1971) and Miskel (1973) have dealt with attitudes relative to salary and fringe benefits. Giandomenico (1973) and Miskel (1974) investigated teacher needs and teacher militancy with respect to collective negotiation.

Predictions of increased professional autonomy through negotiation have been made by many authors. Notable examples are Lieberman and Moskow (1966), Stinnett, Kleinman, and Ware (1966), and Carlton (1968). When a major class of outcomes predicted through collective negotiations has not been well documented the process then cannot be well understood. This study therefore was one step toward investigating the relationship of collective negotiations and professionalism in education.
An important part of the study was to describe the relationship between collective negotiation and perceptions of professional autonomy over time. This relates to the idea advanced by Lieberman and Moskow (1966) that negotiable items relative to autonomy would not be initially important in negotiation. They, and others (Goldberg 1968, Epstein 1969, and Perry and Wildman 1970), document the contention that salary and other economic items occur in negotiation prior to "professional" item negotiation. This study investigated the time relationships for negotiation of items of professional autonomy.

Federal Executive Orders 10988 of 1962, 11491 of 1969, and 13175 of 1975, and the Postal Reorganization Act of 1970 have increased the power to negotiate for certain employee groups within the federal government. The Clay-Perkins Bill of 1973 and the Thompson Bill of 1975 have sought to delete exemption of teachers from the National Labor Relations Act or permit teachers collective negotiation rights on a national scale. While these bills have so far been unsuccessful, they do have the effect of making this study timely as an input to investigating effects of varying conditions of collective negotiation.

Assumptions

For the purposes of this study, the following assumptions were made:

1. Teacher perceptions of professional autonomy were a realistic method of assessing autonomy.
2. Processes in collective negotiations as structured by state statutes, or lack of a statute, would have bearing on teacher perceptions.

3. The use of random sampling techniques for selection of school districts to be surveyed and for selection of teacher respondents within each school district made the survey population a representative sample for each state included in the study.

4. The use of a panel of judges and factor analysis of pilot study data was a reliable means of developing the questionnaire used.

5. The inclusion of demographic variables such as age, sex, longevity, etc., in the data collection and analysis was a satisfactory means of control for such variables.

6. The use of a Likert-type questionnaire was appropriate for the study of perceptions in the educational sector.

Definitions

The following definitions were collected or constructed for use in this study. Other definitions, irrespective of merit, were not used in the study.

Collective negotiations means the formal process by which employers negotiate with the duly authorized representatives of their employees concerning wages, salaries, and other conditions of employment, and on such matters as required by statute or as agreed upon by the parties concerned.
Professional, as defined by the National Labor Relations Act and amended by Taft-Hartley Act of 1947 (1960), refers to:

(a) Any employee engaged in work

(i) predominantly intellectual and varied in character as opposed to routine mental, manual, mechanical or physical work;

(ii) involving the consistent exercise of discretion and judgment in its performance;

(iii) of such character that the output produced or the result accomplished cannot be standardized in relation to a given period of time;

(iv) requiring knowledge of an advanced type in a field of science or learning customarily acquired by a prolonged course of specialized intellectual instruction and study in an institution of higher learning or a hospital, as distinguished from a general academic education, or from an apprenticeship or from training in the performance of routine mental, manual, or physical processes; or

(b) any employee, who

(i) has completed the courses of specialized intellectual instruction and study described in clause (iv) of paragraph (a), and (ii) is performing related work under the supervision of a professional employee as defined in paragraph (a).

Autonomy is the latitude for decision-making concerning the manner in which the work of teachers is to be conducted.

Scope of negotiation encompasses all matters which are negotiable in a formal manner by the authorized representatives of the teacher organization and the school board.

Conditions of employment refers to all aspects of being employed in the school district, including wages and salary or
other monetary gains as well as the existing personnel regulations and formal work rules that delineate selection for and continuance in employment.

**Independence** refers to the freedom of the teacher to pursue individual standards (closely akin to academic freedom).

**Status** is the capacity to interact with peers, students, and the community from a position based on recognition of training and expertise.

**Self-governance** is the power to govern extra-legal conditions of employment through individual or teacher organization actions.

**Responsibility** is regarded as the opportunity to frame the form of a teacher's service to society by defining directions within the educative process.

A **teacher** is any full time employee certificated under state law as a teacher, and classified by the school district as a teacher, who serves in a classroom setting for at least 75% of his/her daily hours of work.

A **metropolitan area** refers to a county or group of counties which contains at least one city of 50 thousand (50,000) inhabitants or more, or multiple cities with contiguous boundaries, and a population of 50 thousand (50,000) inhabitants or more, constituting for general and socioeconomic purposes a single community.
An urban school district is one that exists entirely within the boundaries of a metropolitan area.

A rural school district is one that exists outside of a metropolitan area in the situation of a single district serving a single community and its environs.

A small district is a school district employing less than 200 teachers.

A large district refers to a school district employing 200 or more teachers.

Limitations
This study was subject to the following limitations:

1. The population of the study was confined to the states of Arizona, California, and Nevada.

2. Data collection occurred during the time of year when negotiations were in progress. This timing may have intensified response magnitude and affected the return rate of the questionnaire.

3. A single Arizona school district was used in the pilot study to furnish raw data for the factor analysis instrumental in establishing the final draft of the questionnaire.

4. No reasonable control could be established over the volunteerism traits of teacher respondents.
Summary

Collective negotiation in education has become a nationwide process. Theorists and practitioners in education have predicted an increase in scope of negotiation as the process becomes ever more widespread. With increased scope, greater emphasis on the negotiation of items related to professionalism was expected. One class of professionalism items deals with professional autonomy.

Teachers in three states—Arizona, California, and Nevada—were surveyed in this study. The study was designed to describe relationships between professional autonomy and varying conditions surrounding negotiation. The purpose of the study was to determine whether there were significant differences in teacher perceptions of professional autonomy relative to:

1. Conditions of a state collective negotiation statute.
2. Elapsed time since passage of particular state statute.

Certain demographic variables (see list on page 4) were also investigated.

Chapter 2 presents a review of literature relative to professional autonomy, collective negotiations, and the demographic variables investigated by this study. Chapter 3 details the design of and procedures used in conducting the study and Chapter 4 presents and analyzes the data obtained. Chapter 5 reports conclusions, implications, and recommendations.
The review of literature is divided into three sections. The first section deals with professionalism, the second section with collective negotiations, and the third with the demographic variables included in this study.

### Professionalism

This study had professional autonomy as a major theme. To index the concept of professional autonomy, it was necessary to review the literature on the general concept of professionalism. Because teachers work within large organizations to serve their "clients," the review of professionalism included literature concerned with the functioning of professionals within organizations.

Greenwood (1957, p. 45) gave the elements of professionalism as:

1. a basis of systematic theory;
2. authority recognized by the clientele of the professional group;
3. broad community sanction and approval of this authority;
4. a code of ethics;
5. a professional culture sustained by formal professional organizations.

Hall (1968, p. 92) used the same general elements, then considered attitudinal attributes of professionalism; they are:

—the use of the professional organization as a major reference--this involves both the formal organization and informed colleague groupings as the major source of ideas and judgments for the professional in his work.

—a belief in service to the public.

—a belief in self regulation--it is the belief in colleague control of the individual professional.

—a sense of calling to the profession--a reflection of dedication to the work done by the professional.

—autonomy--this involves the feeling that the practitioner ought to be able to make his own decisions without external pressures from clients, those who are not members of his profession or from his employing organizations.

Goode (1957), Gross (1958), Kornhauser (1960), Hughes (1963), Carr-Saunders and Wilson (1964), Jackson (1970), and Ritzer (1972) used similar basic elements to define professionalism. Wilensky (1964) provided a comprehensive discussion of professions and also delineates the elements necessary for an occupation to have professional status.

Stinnett (1952) and Lieberman (1956) established elements that deal with teaching as a profession. Lieberman (1956, p. 2) listed the elements of professionalism as:

1. A unique, definite, and essential social service;

2. An emphasis upon intellectual technique in performing the service;
3. A long period of specialized training;

4. A broad range of autonomy for both the individual practitioners and for the occupational group as a whole.

5. An acceptance by the practitioners of broad personal responsibilities for judgments made and acts performed within the scope of professional autonomy;

6. An emphasis upon the service to be rendered, rather than upon the economic gain of the practitioners, as the basis for the organization and performance of the social service delegated to the occupational group;

7. A comprehensive self-governing organization of practitioners;

8. A code of ethics which has been clarified and interpreted at ambiguous and doubtful points by concrete cases.

Flexner in 1910 established the ground work for considering professionalism in the medical field. He is credited with the impetus for establishing "standardized" education for professionals. This led to licensing and the establishment of a specific esoteric body of knowledge as an element of professionalism (Moore 1970).

Teachers satisfy the first three elements of professionalism: (1) an essential social service, (2) emphasis upon intellectual technique, and (3) a long period of specialized training, by the orientation and length of their university work (Childs 1950, Barber 1963, and Haberman and Stinnett 1973).

Element number seven, a well-established organization, is historical in education. Teachers took the first step toward
professional organization in 1794 by forming the first local organization in the United States. State organization occurred by 1845 and a national organization by 1857 (Carr-Saunders and Wilson 1964). After these initial steps toward professionalization, teachers faltered and it was not until 1929 that a formal code of ethics appeared for the teaching profession (Wilensky 1964). Element eight (a formal code of ethics) was thus satisfied.

All of the foregoing elements have been merged in the legislation regulating teacher licensing or certification in most states (Haberman and Stinnett 1973). The determination of these characteristics have been state and/or local legislative functions.

State level regulations have been established and modified by procedures that include input from organizations that represent teachers as well as administrative and legislative groups (Gilroy et al. 1969). Formal establishment and modification of such regulations is the responsibility of the state legislative organization backed by the state level administrative organizations (Goldberg 1968). Many regulations pertaining to professional activities are established in the policy and practices of local boards of education within the more general guidelines of the formalized state level regulation (Lieberman 1956).

Hall (1968) suggested that an essential aspect of professionalism is that the occupation involved be controlled by a
collegium. This concept of a "profession" has been violated by the establishment of regulations by the laity of legislatures and local boards. Such regulation by laity limits the professional organizations of teaching, and in that sense has made teaching less than a profession. Seymour (1963, p. 23) addressed this problem by stating that, "Professionalism is a state of mind, not a reality. Neither statute nor regulation, neither code nor shibboleth will make a teacher a professional." It may be that regulations, statutes, codes, and shibboleths actively interfere with attaining professionalism, as argued by Hall (1968). It seems apparent that all professions have certain regulations which restrict the rights of practitioners to be theoretical professionals. Governmental regulations concerning the training, ethics, areas of service, and licensing exist for nearly all well-established professions (Carr-Saunders and Wilson 1964).

Whittlan (1964) said that the professional status of teachers is questionable due to lack of autonomy. Etzioni (1969) considered teaching to be a semi-profession. A primary reason is lack of autonomy. He (1969, p. 41) stated: "As long as school systems feature a distribution of authority where those in authority hold all formal powers, it may be that insistence on equality is the main assurance that teachers possess sufficient autonomy to make judgments they consider essential to effective teaching." From this background it appears that the professionalism of teachers would be better established if teachers were more
autonomous in determining the form of the service they perform in our society.

Elements one, two, three, seven, and eight are characteristics that the profession of teaching exhibits through processes within a larger organization: the bureaucracy of legislative, administrative, and judicial functionaries that make up the local, state, and due to special programs, the federal government. Teacher organizations and individual teachers are not in a position to effectively negotiate these elements with the bureaucracy except in a very limited sense. The ascriptive professional is "a work practitioner, whose task commitment is performed in a monopolistic organization which determines his status, evaluates his ability according to organizational requirements, and delineates, through a process of selection and designation, the precise area within which he will carry out his activities (Feld 1964, p. 56)." Teachers are ascriptive professionals when these five elements are considered.

Haga, Graen, and Dansereau (1974, p. 133) noted this relationship of bureaucracy to professional autonomy by stating:

An essential assumption of bureaucracy theory is that work roles are tightly prescribed and rigorously enforced . . . . This fixed role model holds that the content of tasks in a given role is set by structure and environment but almost never by the person occupying that role . . . . Bureaucratic theory assumes that people take roles; it does not allow that they can also make them.
Scott (1966, p. 270) wrote of a fundamental change in professionalism when professionals are employed in organizations:

- They must sacrifice some of their autonomy and conform to certain organizational rules for a simple reason: they do not possess all the basic skills for doing the work but are part of a larger and more complex system in which they perform only some of the required activities. Their activities must be regulated to fit in with the over-all organizational purpose as well as coordinated with the activities of others.

The Lieberman (1956) elements that have been least structured by the bureaucracy surrounding education are four, five, and six. A broad range of autonomy for the individual practitioners and for the occupational group as a whole (element four) has been somewhat structured by formal and informal regulations for teachers as discussed above. It is difficult for such regulations to specify the actions of the individual teacher in the classroom operation. In the classroom, teachers are more autonomous than they are in out-of-classroom roles (Massey and Vineyard 1961). Thus we have a paradox that concerns teachers. How can a teacher be autonomous in the classroom while lacking involvement in the decision process at higher levels of the educational system?

Bidwell (1965, p. 976) suggested that a "structural looseness" exists in schools and that autonomy of the individual teacher is carried over into total school operations. Litwak (1961) advanced a model of bureaucracy which he referred to as a professional model. He contrasted this model to the Weberian model and the Human Relations model. Litwak's "professional"
model is a mixture of the other two, and approximates the nomothetic and idiographic dimensions of Getzels-Guba (Getzels 1958). For example: the criteria of impersonal relations is held as extensive in an organization under the Weberian model, as minimal under the Human Relations model, and as one part extensive and one part minimal under Litwak's "professional" model.

The "professional" model may be useful to describe conditions in educational organizations at present. It may be useful in offering autonomy to teachers, but without extensive work by the people within a school system to define the "professional" model, it seems difficult to implement. Negotiation can be a major part of the extensive work necessary to define and implement such a "professional" model.

Russell Thornton (1970) reported a study which indicates that professional and organizational commitments can be compatible, if the professional perceives and organizational situation as reaffirming and exemplifying principles of the profession. Collective negotiation is one means of defining the roles and responsibilities needed to meet the principles of the teaching profession within the bureaucratic school organization.

Element five, acceptance of responsibilities for judgment and actions, is clearly the obverse of the professional autonomy coin. If the professional is to be responsible for the outcomes of his work he must have the freedom to regulate inputs (Moore 1970). Etzioni (1969, p. 5) felt that increased demands for accountability may have a great effect upon the teaching
"profession." He believed that informal autonomy will give way, either to increased centralization of authority in the administration of local and state agency powers, or to professionalization and the powerful professional organization which professionalization implies. Negotiations may lead to a power struggle between these two groups for the centralized authority of schools.

Element six, emphasis on service to others, is interwoven through both elements four and five and is included as an aspect of autonomy. Emphasis on service to others differs from the social service aspect of element one by its being contrasted to economic gain.

Element six, emphasis on service to others over economic gain for self, has been discussed by many authors under the general term of dedication. It is a very difficult element to assess. Moore (1970, p. 21) made the point that only economically advanced societies are able to support a professional class of more than 3 or 4% of the work force. The United States shows a distinct increase in number of professionals as its economy progresses. In 1900, 4% of the employed population were "professional" workers. In 1950, 8%; in 1960, 12%; and in 1966, 13% of the working population were "professionals" (Moore 1970, p. 20).

A second point made by Moore with regard to service and economic gain, is that teachers, by being salaried members of the bureaucracy, are not subject to direct control by clients.
Carr-Saunders and Wilson (1964) suggested that teachers have foregone the economic differential available under client controlled systems for the security of the tenure system and the salary schedule.

Prandy (1965, p. 251) isolated the problem by saying:

Many of the activities of trade unions and professional associations are very similar, and are mainly directed to the same end of economic protection, but it is more important to realize the differences in ideology which underlie the two. Trade unions are class bodies—they bargain with employers; professional associations are status bodies—they bestow a qualification and seek to maintain and enhance its prestige.

Teachers are often torn between these two poles, the bargaining emphasis of the "trade union" and the prestige emphasis of the "profession."

While collective negotiations in education have been carried out in both the economic and the service areas, Etzioni's (1969) discussion of equality of reward and autonomy interrelates economic gain with professionalism without being able to detail the dynamics of the relationship.

In summary, similar time lines for increased emphasis on negotiation and increased demand for accountability may be coincidental, but a review of literature on professionalism suggests that the two processes are interrelated and that an occupation seeking professional status would be actively involved in establishing both the freedoms and responsibilities of its work.

Moore (1970, p. 189) summarized the problem by saying: "The
realities of administrative supervision, of restrictions on what lines are to be pursued, and perhaps even on the procedures to be followed, impair in some degree professional autonomy." Teachers may be using collective negotiations as the medium for establishing professionalism and the autonomy that accompanies professionalism. Haberman and Stinnett (1973, p. 3) summarized the thinking on professional autonomy and collective negotiation by saying:

It should be observed that there remains a reluctance on the part of legislatures to concede to the teaching profession the same degree of autonomy in its affairs that is accorded other professions. Of course the rationale for this reluctance is that teaching is a public profession. . . . Only by continued and aggressive insistence on the right to autonomy will the teaching profession bring about needed reforms and legislation. For example, when NEA and AFT proposed state legislation conferring on teachers the right to negotiate or bargain with school boards over economic and working conditions, those proposals were generally considered radical. But the idea is now generally accepted as sound.

Collective Negotiations

Teachers have been negotiating conditions of their employment in one form or another for many years. Although the National Teachers Association was founded in 1857 and the American Federation of Teachers forerunner, the Chicago Federation of Teachers, was formed in 1902, negotiations, until about 1959, were mostly between the individual teacher and the school administrators. However, there has been isolated collective action by groups for approximately 100 years (Perry and Wildman 1970).
Keough (1970) reported a strike in Pennsylvania as early as 1880. Haberman and Stinnett (1973) noted that there were 20 teacher strikes in the 60 years between 1880 and 1940, and 110 isolated strikes between 1940 and 1962. They compared this to the record of over 500 teacher strikes between 1962 and 1972. Collective action by teachers has grown in magnitude. A brief historical review will help place collective negotiations in perspective.

There were a number of reasons for the lack of collective action by teachers in the early days of teacher organizations. Interpretation of private sector labor laws slowed collective action in education. The interpretation given by the courts to Sections 1 and 2 of the Sherman Act of 1890 limited collective action. The courts' interpretation of "persons" as defined by the Sherman Act placed labor organizations and associations into the category of an agent of "restraint of trade." Randle (1951, p. 53) wrote: "By 1890 the courts had accepted unionism and collective bargaining . . . . The historic background of the Sherman Act, therefore, does not appear to support . . . a pattern for prosecuting and enjoining labor."

The case of The United States v. Debs (64 F 724), 1894, illustrates the pattern of prosecuting and enjoining labor referred to by Randle. In the Debs case the Supreme Court established the principle that anti-trust law (the Sherman Act) applied to labor as well as capital if it could be shown that
labor union activity was in restraint of trade. Such a narrow interpretation of the law, coupled with a broad definition of "restraint of trade" produced the pattern of application of the Sherman Act.

The Clayton Act of 1914 was designed to end such interpretations of the Sherman Act and to free labor from the "host of what might accurately be called judicial perversions (Gregory 1949, p. 185)." The Clayton Act did not accomplish this, and labor was not able to organize for concerted collective action until the passage of the Norris-LaGuardia Act of 1933. Even this act did not completely nullify the courts' use of injunction against labor due to the residuals of the Sherman Act interpretations (Randle 1951).

It was left for the National Labor Relations Act of 1935, subtitled the Wagner Act, to finally and explicitly define the concept that "employer refusal to permit employees to organize and to bargain collectively with the employer through the organization of their own choice was a major cause of industrial conflict (Lieberman and Moskow 1966, p. 68)."

These legislative milestones had been reassessed by 1947, and the passage of the Taft-Hartley Act of that year created a balance of power between labor and management that has been reasonably well maintained until the present. A key section of the Labor-Management Relations Act of 1947 (Taft-Hartley Act) speaks directly to the question:
It is hereby declared to be the policy of the United States to eliminate the causes of certain substantial obstructions to the free flow of commerce and to mitigate and eliminate these obstructions when they have occurred by encouraging the practice and procedure of collective bargaining and by protecting the exercise by workers of full freedom of association, self-organization, and designation of representatives of their own choosing, for the purpose of negotiating the terms and conditions of their employment, or other mutual aid or protection (Section 1, National Labor Relations Act 1960).

This short summary of legislation, while dealing with the private sector, has implications for education. In 1947 education was not a part of the political arena that generated such legislation in the private sector. A push by teachers for power to act collectively coincided with congressional discussions and subsequent passage of the Taft-Hartley Act of 1947. The Norwalk Teachers Association struck in 1946, and the Teachers Federation of Buffalo struck in 1947. Both of these collective actions resulted ultimately in legal reactions that helped teachers obtain rights to collective action. One legal reaction, the Condon-Wadlin Act in New York State, was a result of the Teachers Federation of Buffalo strike (Keough 1970). The Condon-Wadlin Act recognized collective action in a negative manner. It prohibited strikes by public employees and gave such severe penalties for strikes that the Act was rarely utilized (Cole 1969a). The Condon-Wadlin Act was so ineffective that the Public Employee's Fair Employment Act of 1967 (the Taylor Act) was passed to replace it. Governor Nelson Rockefeller (1967, n.p.) said upon signing the Taylor Act: "The necessity of this law has
unquestionably been demonstrated over the years by the utter inadequacy of the Condon-Wadlin Law . . . ."

Norwalk Teachers Association v. Board of Education, City of Norwalk was finally decided by the courts in 1951. Haberman and Stinnett (1973, p. 2) summarized the decision by writing: "Since teachers were public employees the strike was illegal, but the school board did have the legal right to negotiate with teachers." The importance of the Norwalk decision was the recognition in the absence of legislation of the rights of a board and teacher organization to bargain if both groups agreed.

Another legal landmark was the Wisconsin Municipal Employees Relations Act of 1959, which gave municipal employees in Wisconsin the right to organize and negotiate with cities (Goldberg 1968). In 1962, Executive Order 10988 was issued by President John Kennedy. It recognized the right of federal employees to organize and authorized collective negotiations of limited scope between employee organizations and federal governmental agencies. Stieber (1973) stated that it excluded wage and fringe benefit bargaining as well as certain areas such as mission of the organization. Such actions stimulated the development of negotiations procedures at the state and local government levels, according to Lieberman and Moskow (1966).

The data on teacher strikes reported above suggest that pressures were building to force legal recognition of teachers' rights to organize, negotiate, and participate in collective
actions. The legal summary above is important in that it reflects societal views of collective action in the private sector.

Teachers and society have changed their views concerning collective negotiations in education (Lieberman and Moskow 1966, p. 60). Brophy and Good (1974) cited woman's unequal place in society and the feminization of teaching as aspects of society's view of teachers. The work ethic of teachers themselves as service oriented and dedicated to their students at the expense of self is a reason advanced by Evans (1969). Stinnett (1968) noted a public view of teachers as being relatively uneducated in the early years of public education and of mediocre mentality up to the present. Lutz and Azzarelli (1966) listed: (1) the authoritarian idea of school administration that developed from Taylor's concept of scientific management in the early 1900's and (2) the structural organization of the NEA during this same period as factors limiting teachers' demands for collective negotiations. As opinions and practices changed in education, teacher organizations became more cohesive. Consolidation of districts into larger units made teachers less aware of community and more aware of profession.

Equalization of benefits under the jurisdiction of state agencies strengthened teacher organizations. Recognition of the collective actions of other public employees such as police and firefighters made many teachers restive with their lot. The increase in and successes of collective action at the federal level
further encouraged teacher organizations to increase collective action. Lieberman and Moskow (1966, p. 60) noted all of the social dynamics listed above as partially influencing teachers and society with respect to collective action by teachers.

Another factor contributing to increased collective action by teachers was the interest given economic conditions during the 1950's and 1960's. To separate opinions concerning the role of a teacher and opinions about the teacher's economic condition is difficult. Both had a bearing on effective organization of teachers.

Randle (1951, p. 50) stated:

Several principles must be kept in mind as one considers the law of collective bargaining. Most labor laws are the result of two major and several minor causal factors. Primary motivation is derived from economic conditions and public opinion—the two being inextricably intertwined. Minor causations arise from political necessities and compromises, desires for punitive action, hereditary traditions to be observed, and social pressures.

The previous outline of causation of legal changes omits economic conditions. Teachers had been consistently underpaid when compared to other professions and to many trade occupations. Shils and Whittier (1968, p. 479) noted that: "Prior to the pressure for collective negotiations in the United States, teachers ranked poorly in average earnings among the professions. in 1959 teachers rated fourteenth among eighteen professional groups."

Such statistics suggest that the economic pressures put on teachers resulted in their desire for collective action.
Donley (1976) listed economic pressure as one of six reasons for increased teacher militancy. Stinnett (1968) noted that teacher salaries were less than half that of non-salaried professional practitioners as late as 1939.

Shils and Whittier (1968, p. 6) discussed more recent economic conditions in teaching and said:

During the period of 1951-59, while classroom teachers' average salaries rose from $3,024 in 1951 to $4,797 in 1959, the U. S. Department of Labor reported the median for city workers as $4,199 to $6,164 for the same years ... Manufacturing wages rose from $3,606 in 1951 to $5,215 in 1959.

In tracing the level of teacher salaries over time, Smith showed that teachers, by 1965, had made greater percentage gains than trade groups. Still, in 1965 teachers' average salaries were just slightly more than 50% of the average salaries in many other professions (Shils and Whittier 1968).

The intent of the foregoing review is to arrive at the advent of state level legislation in 1965 by two routes: (1) labor law progression, and (2) some of the social and economic factors which complemented it.

By 1965 the Task Force on State and Local Government Labor Relations had started to publish recommendations from its work in various states. These reports established collective negotiation as a cooperative function to enhance labor relations at the state and local government levels.

In 1965, six states passed legislation authorizing collective negotiations by teachers. California was one of the
six (Goldberg 1968). The Gordon H. Winton, Jr., School Employer-
Employee Relations Act gave teachers the formal power to "meet
and confer" with local boards (Education Commission of the
States 1972). The Winton Act did not define certain aspects of
negotiations in strict terms. It left the administration of
the bargaining in the hands of the local board by ordering the
board to adopt reasonable rules and regulations of employer-
employee relations (Section 13087). It did not attempt to
define "reasonable" for the board. "In Good Faith Meet and Con­
fer" responsibilities were given to other state employee groups
but schools were charged only with a mutual obligation to free­ly exchange information, opinions and proposals (Section
13081). Proportional representation was specified, and the
law lacked deadlines for reaching agreement. It lacked strong
impasse resolution provisions, other than fact finding, as
well as any provisions dealing with strikes. Unfair labor prac­
tices were spelled out, however. The section dealing with the
scope of negotiable items specifically listed wages, hours, and
employer-employee relations, however, the scope was not limited
to the items. Employer-employee relations were defined in part
as definition of educational objectives, course content, curricu­
la, textbooks, and other aspects of the instructional program
that were under local control. Such items are clearly within the
area of professional autonomy as shown under California Education
Code, Title V, Chapter 10, Section 13085--Negotiations. The
The general tone of Section 13085 was felt by Epstein (1969) to be conducive to teacher bargaining interest in professional items. James (1975) noted that California teachers may meet and confer only on items of district policy.

As of January 1, 1976 the provisions of the Winton Act were superceded by SB 160, Title V, 3540 through 3549. The effective date for total implementation of SB 160, the Rodda Bill, was July 1, 1976.

The Rodda Bill is more comprehensive and explicit than the Winton Act. The new act provides for the establishment of a separate administrative agency, the Educational Employment Relations Board (E.E.R.B.). Representation of teacher professional organizations is no longer proportional, and elections to determine unit representation rights were authorized as of April 1, 1976. The majority of the new provisions went into effect July 1, 1976. The 1976-77 school year will be the first year of practice under the provisions of the new teacher negotiations act in California. The definition of scope does not differ dramatically from the Winton Act, Section 3543.2, but does contain an explicit management rights clause. All matters "not specifically enumerated" are reserved to the public school employer. Enumerated matters are wages, hours of employment and other conditions of employment. Conditions of employment are enumerated as health and welfare benefits, leave and transfer policies, safety conditions, class size, employee evaluation procedures, organizational
security, and grievance procedures. Employees are given the right to "consult" on the definition of educational objectives, course content, curriculum, and textbook selection (3543.2).

Other basic changes exist. The Rodda Bill stresses mediation rather than fact-finding for impasse settlement (3548.1). Section 3548.5 specifically allows final and binding arbitration of grievance, or agreement to procedures established by the E.E.R.B. Court orders compelling arbitration are provided as a remedy if either party balks at the other procedures provided. Deadlines are established in certain areas such as impasse but are still not well defined for the negotiating process as a whole. There are explicit provisions for financial disclosure (3546.5). A clear statement based on Section 923 of the California Labor Code prohibits strikes. In general, Bowen (1975) felt that the new California statute will significantly alter the "unrealistic professional focus" of prior relationships between parties to negotiation in public education in California.

Nevada enacted the Local Government Employee-Management Relations Act (LGE-MRA) in 1969. As has often been the case in other states, teachers were omitted from the initial legislation, but were included under later (1971) amendments. The Nevada Act is more narrowly constructed than the Winton Act. The LEG-MRA in Nevada makes it the government agency's duty to negotiate (Section 288.150). The scope of negotiations is clearly defined as wages, hours and conditions of employment (Education
A state level regulatory board is established in Section 288.080 of the Act. Strikes and other prohibited practices are listed, and remedies are outlined (Sections 288.230, 288.270, and 288.240 respectively. Goldberg (1968) recognized that while local jurisdictions have the responsibility to negotiate, state jurisdictions must sanction all contractual agreements. Mutual voluntary mediation is authorized for impasse (288.190) and the fact finding process is outlined (288.200). Representation is exclusive rather than proportional as was the Winton Act of California (Education Commission of the States 1972). The Nevada law allows professional autonomy items to be bargained under "conditions of employment" but the Board of Education is not required to negotiate such items (James 1975).

Arizona has no legal structure for collective negotiations by teachers. The question of legality of negotiated contract between teachers organizations and school boards was brought in Arizona in 1972. A teacher strike occurred in Scottsdale, Arizona over disagreements between teachers and the Board of Education concerning "contractual" provisions which had been "negotiated." The legality of the strike was questioned and resolution of the conflict was sought through the courts. The Court of Appeals found in Board of Education v. Scottsdale Education Association (1972) that the agreement negotiated between the parties in 1971 was not binding. This decision was handed down on the basis that it was "without the power of the Board to enter into (a
contractual agreement with teachers) and was therefore void."
The strike was deemed illegal. Another practical effect of this
decision was to restrict teachers in "negotiating." The decision
was based on the absence of explicit Arizona statutes authorizing
negotiation by teachers.

The Arizona revised statutes do not prohibit negotiations,
however. Because of this, and the political climate in many Ariz­
ona districts, negotiations tend to be of a meet and confer
type, and Arizona teachers have no real power to bargain over
"professional" items.

In summary, this section reviewed the basic legislation
directly applicable to collective negotiations in California,
Nevada, and Arizona. The review first noted the general condi­
tions that typically affect labor law legislation in both public
and private sectors. Following this general review the legal
basis for collective negotiation in the three states of interest
have been considered. California had a statute, the Winton Act,
which was in effect between 1965 and 1976, until supplanted by
the Rodda Act. The Winton Act was rather inexplicit. Nevada's
statute, the Local Government Employee-Management Relations Act,
has included teachers since 1971. The LGE-MRA is much more ex­
plicit than the Winton Act. Arizona has no current collective
negotiation statute pertaining to teachers. A court case (Board
of Education v. Scottsdale Education Association 1972) and sub­
sequent State Attorney General's opinions interpreting the
Scotts scale decision as it applies to all school districts form the legal precedents. Arizona is certainly the least explicit of the three states in structuring collective negotiations between teachers and local boards by means of a relevant statute.

This section of the review of literature outlined questions and suggested the two major variables of the study: (1) possible differences in perceived professional autonomy under varying conditions of legislation; and (2) the different dates of passage of state statutes in each of the three states, raises the question of effect of time upon perceived autonomy. The notion that perceived professional autonomy of teachers will differ relative to the number of years of negotiation was established as the second major variable.

The final section of this chapter reviews the relationships between legal aspects of collective negotiations and the demographic variables that have a possible relationship between legislation and professional autonomy.

**Demographic Variables**

Demographic variables in this study were chosen to control and illuminate major areas that might confound the major variables. Most of these demographic variables have a long history of study with few truly meaningful generalizations resulting. Sex differences, for example, are legendary in education. Perceptions by educators relative to urban and rural location, size of district, age of teacher, longevity of employment,
elementary versus secondary assignment, and NEA or AFT affiliation of teachers have been the subject of generalizations. The demographic variables of amount of training in Educational Administration and formal training in negotiations theory and practice were included because they seemed apropos to teacher perceptions of professional autonomy.

This section of the review of literature was intended to establish the possible relevance of these variables to teacher perceptions of professional autonomy. These demographic variables serve also as a means of control for the two major variables.

Location--Urban/Rural

Much has been made of possible differences between teachers in the urban as opposed to the rural school setting. Gouldner (1958) identified six latent roles of faculty members in the college environment. His study has been generalized to include all teachers. Gouldner's category of "local" has often been applied to rural teachers and his category of "cosmopolitan" to urban area teachers.

Brumbaugh (1973) found no significant difference between role types with respect to attitudes toward passage of the Pennsylvania collective negotiation law. Napier (1973) reported that attitudes are identifiable by urban or rural place of residence. Schnore (1966) in a leading study reported definite differences between rural and urban attitudes in general.
Jackson (1970) in his comprehensive work, *Professions and Professionalism*, equated Gouldner's cosmopolitan characteristics with professionalism. Spero and Capozzola (1973) suggested that the issue of decentralization, a typically urban issue, has affected the control of curriculum matters, teacher assignment, and many other educational decision making processes. Cole (1969b) agreed and his review of the Oceanhill-Brownsville confrontation outlined this view.

Brown (1973) found that urban school districts have higher quality of education, better trained personnel, and teacher organizations that are more highly respected by district administrators and board members than do rural districts.

Eckstein and Noah (1973), in the portion of their study that applies to urban teachers in the United States, found that urban teachers are:

-- younger.
-- less likely to be female.
-- have higher salaries.
-- more mobile within the school system.
-- more individualistic.
-- have greater opportunity to become administrators due to the higher proportion of administrative jobs in urban schools.
-- more likely to hold a part-time job.
-- exhibit a greater variety of membership in professional organization.
Claggett (1972) concluded that the homogeneous social history of rural teachers makes them non-change oriented as opposed to change oriented. Martindale and Hanson (1969) in their study of a small Minnesota community found distinct conflict between local and translocal attitudes. Glaser (1963) indicated that prior work which used urban and rural as opposing variables does not show results that are consistently clear enough to support such a generalized dichotomy.

Size

The size of the school system has concerned many researchers. Durkheim (1949) cited evidence that small groups react more rapidly and with less diversity than large groups. Ryans (1960) reported that teachers in small schools tend to be more conservative in relations with pupils than teachers in large schools. Brickell (1967) made the point that small schools may not have well qualified teachers available in all areas. If this very clear aspect of professional service suffers in small schools, other less well defined aspects of professionalism may be restricted.

Stinnett (1968, p. 502), in discussing a "new attitude of aggressiveness among teachers," listed size of school district as a factor. The progress of teacher militancy has been seen by Dimock (1970, p. 85) as being "more affected by size than has so far been recognized." Mills (1955) noted a positive relationship between size and degree of bureaucratization. Bidwell (1965) did
not support this view. Martin (1972) felt that the negotiation process itself differs between small and large districts with high level administration able to work with both teachers and boards in small districts but only with boards in large districts.

Age

The variable of age is historic in studies concerning teacher characteristics. Thomas (1959) reported different role concepts for workers of different ages. Ryans (1960) found age to be a solid experimental variable when assessing the characteristics of teachers.

Hall and Mansfield (1975) showed a significant difference between age groups of scientists and engineers with respect to their views of autonomy. Corwin (1969) found a direct positive correlation between mean age of teaching faculty and incidence of conflicts and disputes within school systems. Gilroy et al. (1969) gave the decreasing mean age of teachers as a reason for teachers being less content with the educational environment. Lawler (1971) reported that younger workers are more concerned with financial security items than are older workers. Super and Bohn (1970) reported findings that are in opposition to Lawler.

Stinnett (1968) found age to be a recognizable variable of teacher militancy. Hellriegel, French, and Peterson (1970) concluded that due to longer exposure to the educational milieu,
where strikes are anathema, older teachers are less likely to support strike action.

Cole (1969b, p. 921) in a description of teacher militancy said:

Age was important not only because it was correlated with conservatism but because it was related to the type of socialization the teachers received in college. The older teachers received their training at a time when the self image of teachers differed sharply from that of the younger teacher: The older teachers were taught that they were public servants, that their first duty was to their pupils.

Alluto and Belasco (1972) showed a tendency for older teachers to have more decision making opportunity and less favorable attitudes toward collective bargaining than younger teachers. Miskel (1973) found younger teachers have a greater desire for autonomy and better working conditions than do older teachers.

Sex

The inclusion of sex as a variable in this study has its impetus in prior research but is timely due to recently increased female militancy.

Colombatos (1963, p. 36) stated that:

Family versus career is a problem familiar in greater or lesser degree to all working women in our society. It is commonly assumed that this conflict blocks the development of the professional orientation, thereby interfering with the professionalization of occupational roles—such as nursing, social work, and teaching—filled mainly by women.
Cole (1969a) reported that men tend to be more dissatisfied than women with the prestige surrounding teaching as a career. Sergiovanni (1967) found that the sexes do not differ with respect to job satisfaction.

Etzioni (1969, p. 231) wrote that women "... tend to be more interested in giving personal service to clients than in technical mastery of skills or in professional prerogatives to define how their skills will be put to use." A view of a somewhat different point of origin was seen by Howe (1973, p. 101):

The inferior status of women in school systems reflects also the acceptance by women of that status and its legitimacy. At the very least the inferior status of women, especially when they are a majority and should have the power of numbers to call on, indicates an unwillingness to struggle, a reluctance to fight, an avoidance of conflict.

Vollmer and Mills (1966, p. 146) wrote: "There is no immutable relationship between sex roles and occupational life."

Taylor (1973) reported that while women have had limited access to professional organization leadership in the past, the professional organizations are increasingly in support of the Equal Rights Amendment and are becoming aware of staffing discrimination in their organizations.

Wahba (1975) in a study of librarians found that women do not have as high a perceived need for autonomy as men. Fisher (1969) found no significant differences in male-female attitudes toward negotiation. Alexander and Eckland (1974) showed sex differences in college attainment but stated that due
to societal changes, recent and future samples will be less likely to show marked sex differences.

Longevity

Data on this variable were collected to determine whether there was any significant difference among respondent teachers depending upon the number of years service to the school district.

Ryans (1960) found differences in teacher attitudes and behavior that could be attributed to experience. Ryans' study noted that experience and age are related for teachers. This could be confounding in the present study, but with both longevity (experience) and age as variables, comparisons were made. Etzioni (1969) reported that experience is likely to be greater in large districts (13.0 years average) than in small districts (5.5 years average). Here again the use of size as a variable in the present study allows comparison.

Pelz and Andrews (1966) found that performance slacked as experience increased. Hulin and Smith (1965) reported a strong positive relationship between seniority and performance. Oberg (1960) found that longevity is felt to be of great value in applied work and a result of this is a feeling of satisfaction and security existing in more experienced workers.

Super and Bohn (1970) described experienced workers as being in the maintenance stage of their careers. The maintenance stage is characterized by high concern for security and
relatively lower concern for self-fulfillment and autonomy. Hall and Mansfield (1975) reported significant differences between workers with short experience and with long experience on the variables of security and autonomy.

Sperry (1974) found teacher experience to have no significant relationship to educational change. Wright, Virgin, and Griffiths (1972) showed no major differences between three different experience levels on a series of open-end questions to teachers about their schools.

Miskel (1974, p. 294) found experience to be "one of a number of rather poor predictors of teacher attitudes toward collective negotiation issues" in his CNI (Collective Negotiation Index) scale. He further stated that such a finding is counter to "existing anecdotal, empirical, and conceptual knowledge."

Level of Teaching Assignment

Differences between elementary and secondary teachers have been detected by many observers.

Parsons (1959) saw role differences between elementary and secondary teachers. He suggested that elementary teachers are oriented toward "nuturant" interaction with pupils while the secondary teacher's orientation is more toward quality of achievement. Arth (n.d.), in a study still in progress, found different personality traits in secondary and elementary teachers. The Arth study found elementary teachers to be more child oriented,
to have a higher regard for emotion in teaching, and to be less likely to favor professional unions.

Allutto and Belasco (1972) reported definitive differences between elementary and secondary teachers concerning feelings of deprivation in decision making within the school. Cole (1969b) furnished data that show elementary teachers are considerably less likely to support strike actions than are secondary teachers. Ryans (1960) reported some apparent differences in the attitudes and viewpoints of elementary and secondary teachers. He found that there are areas of obvious overlap between the two groups. Lang (1960) concluded that secondary teachers are more concerned with the extrinsic rewards of teaching than are elementary teachers.

Lindgren and Patton (1958) in a study of secondary teachers versus non-secondary teachers found that secondary teachers' attitudes were less favorable to children and to current educational theory and practice than were elementary teachers.

Charters (1963) wrote that society rates elementary teachers as feeling they have lower prestige than secondary teachers. Vogt (1970) reported a study that concludes that elementary teachers see themselves as "less professional" than secondary teachers consider themselves to be.

Leggat (1970) viewed the level of teaching assignment as a segmentation of the profession which culminates in cleavage of solidarity. Fisher (1969) showed no significant differences
between the attitudes of secondary and elementary teachers toward negotiation in the state of Oregon.

Income--Primary/Secondary

This variable was established in response to the near myth that relates low professional involvement of women in education to the incidence of women not being primary wage earners. Lieberman and Moskow (1966, p. 25) wrote: "Ordinarily, the married teacher was not the only breadwinner in the home . . . 92% of the married women teachers reported their husbands to have jobs. The occupational status of the spouses of married teachers was significantly higher than it was for the population as a whole."

Moffatt (1972) reported that female teachers average less in income than males but that their household income is higher. Theodore (1971, p. 13) stated that: "The college educated woman marries within the higher socio-economic levels and thus does not work primarily for financial goals." Landon and Baird (1971) believed that the availability of secondary wage earners keeps a district's salary schedule depressed. Landon and Baird did not distinguish between the sexes in discussing secondary wage earners.

Miskel (1973) approached the question from the standpoint of voluntarism. He found that there is a higher variance of voluntarism for females than for males. Miskel (1974, p. 287) in
a continuation of his earlier work discussed voluntarism in
greater detail and said: "It appeared reasonable to expect that
teachers scoring low on voluntarism [who] must work or perceive
undue constraints in the job, will have different attitudes
toward the importance of some negotiation issues than those
teachers who score high on voluntarism." A low score on volun-
tarism relates to primary income while a high score denotes
secondary income. Miskel (1974) found no support for the hypoth-
esis that voluntarism is significantly related to teacher atti-
tudes concerning collective negotiation.

Contamination of the sex variable with income is a basic
reason for the inclusion of an income variable in the present
study. It was deemed necessary to investigate both sex and in-
come as a control—one upon the other.

Organizational Affiliation

The concern with this variable is whether the respondent
teacher is affiliated with the NEA, AFT, or neither. The ra-
tionale for the use of this variable is that any difference in
the stance of NEA and the AFT concerning collective negotiation
may be reflected in teacher perceptions of professional autonomy.
Donley (1976) reported that 80% of the nation's teachers were
probably organized by 1976. The category of "neither" is in-
cluded in an attempt to assess any differences that may exist
between the organized teacher, either NEA or AFT, and the organi-
zationally independent teacher.
Cole (1969a) pointed out that the NEA and AFT have differed with respect to their policy statements concerning teachers' needs to emphasize professional aspects of their work at the bargaining table. Perry and Wildman (1970) were aware of competition between the NEA and AFT for membership at local, state, and local competition being the most hard fought. Lutz and Azzarelli (1966) and Moskow (1972) considered a fundamental difference between AFT affiliated teacher organizations and NEA affiliated teacher organizations to be that the AFT affiliates emphasized distributive bargaining modes while NEA affiliates emphasized its integrative mode of bargaining.

Knezevich (1970) noted that a difference in organizational structure resulted in the AFT reacting to its membership as a general membership of teachers needing solidarity. The NEA reacted to its membership as a rather loose affiliation of "specialized" members separated into departments within the NEA. Along with this view the American Association of School Administrators (1968) recognized that the AFT affiliates of that time tended to reject administrator participation and that NEA affiliates tended to seek administrator participation in negotiations. Lieberman (1971) believed the AFT and NEA would merge in the 1970's. Moskow (1972) felt that both the NEA and AFT have changed their positions and are now quite similar. Stinnett (1968, p. 489) supported this view when he wrote:
Historically, there has been a clear-cut dichotomy in both the philosophies and procedures, between the American Federal of Teachers and the National Education Association. But in the years since 1962 [with the passage of the professional negotiation and sanction resolutions by NEA] many observers have felt that the two organizations have grown more closely together in their procedures.

Jensen (1969) saw the situation differently. He prophesized that:

1. Organizational rivalry will be intensified by increased bureaucratization, moving teachers toward union philosophies.

2. Economic downturns will intensify rivalry.

3. Increased automation in the schools will increase the militancy of teachers and swing teachers toward union concepts of job security.

4. A rise in teacher unemployment will result in the educational systems inability to create new jobs for younger teachers due to limited expansion of the economic growth of governmental agencies.

Certainly some of these conditions have been fulfilled in the last few years.

Thornton (1971) found no difference between AFT and NEA affiliated districts in negotiated salary levels. Ramer (1972) suggested that this finding may be due to regional strategies of playing off one district, of no matter what affiliation, against other districts of similar size and location. Collins
and Nelson (1968) found that union (AFT) teachers differed in some respects from non-union (NEA) teachers where morale was the major variable.

Educational Administration Training

This variable was used in the study to determine whether perceptions of autonomy varied significantly with respect to the amount of training in educational administration the respondent had completed. The underlying question was: Are there differences in attitudes and perceptions concerning professional autonomy of teachers that relate to training for administration?

Shils and Whittier (1968, p. 437) made the statement: "Teachers' colleges are responsible in some measure for the inbred attitudes that school management ought not to be questioned by teachers or the public; leave the solution of the personnel problem to the educator who holds the proper state certificate in school administration." Burrup (1972) felt there has been improper emphasis in the training of administrators and teachers. He stated that teacher training programs attach little importance to understanding the administrative role, and graduate programs for prospective administrators offer no content or interest for teachers who intend to remain in the classroom. Stout (1973) saw a change in the relationship between the student of educational administration and the teacher inasmuch as more "constructive troublemakers" (activists) are being recruited into educational administration programs.
Luttbeg and Ziegler (1966) found that attitudes differ and that the leaders of teacher organizations tend to have taken more graduate work in educational administration than teacher members. Griffiths (1966) noted that a vast pool of trained but frustrated administrative candidates exists in teacher ranks and wondered about the release of these teachers' frustrations.

Negotiations Training

Negotiations training at the university level is available in each of the three states utilized in this study. A review of college catalogs of major universities in the three states shows that 80% of the universities offer a formal course in "educational negotiations." Eighty-four percent of the universities in the California University system offered this class in 1975. Seventy-five percent of the universities in Nevada and 100% of the universities in Arizona offered the course during the calendar year 1975.

There is a history of workshops on negotiation sponsored by teacher organizations. Patterson (1965) reported the occurrence of NEA sponsored workshops across the United States in 1965. The intent of these workshops was to provide ways to share experience, offer instruction in negotiation, and assist local teachers in becoming involved in the negotiating process at a higher level of understanding (Patterson 1965).

Fiedler (1973) gave a general finding which supports inclusion of negotiations training as a variable in this study.
He found that relatively untrained negotiators perform as if a situation were less favorable to them than do trained negotiators. Ingils (1972) saw problems in lack of knowledge concerning negotiation practices. These problems are: (1) misinterpretation of contracts; (2) misunderstanding of personal responsibilities; and (3) lack of appreciation of the role relations between administration teams and teacher teams. Netusil and Mallas (1973) in a study similar in design to the present study, but with a sample made up of school superintendents, used negotiations training as a variable. They found that 22% of the superintendents listed negotiation courses as a characteristic which most influenced their role in collective negotiation.

In summary, this section of the review of literature established the need for substantive as well as statistical control of certain demographic variables. The demographic variables in this study were location and size of district, sex, age, longevity in job, level of assignment, primary versus secondary income from teaching, organizational affiliation, educational administration coursework, and negotiation training of the teacher respondents. The intent of this section was to establish these variables as areas of uncertainty which needed control in a descriptive study.
Summary

Chapter 2 outlined the review of literature which identified and substantiated the questions of this study. The review of literature was also used to select the variables for this study. This review of literature helped establish the guidelines under which this study was conducted. Once these guidelines were established the methods necessary to carry out the study were selected. Chapter 3 deals with the methods and procedures used to select a sample population, collect data from that population, and organization of the data into a form from which conclusions could be drawn.
CHAPTER 3

METHODOLOGY

The methods used to carry out this study are described in this chapter. The research design and procedures were chosen to produce a descriptive rather than an experimental study. Certain research procedures were selected to facilitate control of as much error as possible.

Research Design

This study employed a survey questionnaire to isolate four factors of professional autonomy. The four factors were:

1. Independence
2. Status
3. Self-governance
4. Responsibility

A treatment by blocks design was selected. The design allowed the inspection of both the main effects and interaction effects of the study variables. The design also permitted the simultaneous study of more than one variable. Because the relationship between "State of Residence" and the demographic variables was of interest, Lindquist's (1956) rationale for design selection was adopted. Lindquist (1956, p. 23) advised that
if "one variable . . . is introduced into the design primarily to make possible a more precise estimate of the other variable" a treatment by blocks design is most appropriate. The demographic variables were introduced to give a more precise estimate of the main effects of the state of residence and interactions were of only secondary interest. Results of the study accordingly emphasized main effects over interactions.

Campbell and Stanley (1963) referred to a design such as the one used in this study as a static group comparison. They correctly identified it as a "pre-experimental" design. Campbell and Stanley listed the needed controls. The major need is a formal means of showing that groups would be equivalent without the dependent variable. They (1963, p. 12) cautioned that control of background characteristics may be "ineffective and misleading particularly in those instances in which the persons in the 'experimental group' have sought out exposure to the dependent variable."

Campbell and Stanley (1963) isolated the major problem of this study; the problem of volunteer bias.

Volunteer bias has been of continuing concern to experimentalists. It was of extraordinary concern in this descriptive study where the data were obtained from volunteer teachers. Rosenthal and Rosnow (1975, p. 133) said: "If volunteer status correlates with the dependent variable of a study, the reduction in individual variation of subjects or the criterion variable
owing to the increased homogeneity of the experimental and control groups could result in nonrejection of the null hypothesis when it was actually false." The opposite, rejection of a hypothesis that should be accepted, is also a possible outcome of volunteer bias.

This experimentalist language, when applied to the present study, means that volunteer bias in a study where rigid controls are lacking could create the illusion of valid relationships where none exist, or of no relationship where one does exist.

Rosenthal and Rosnow (1975) listed characteristics of volunteers which might bias a study. Six of the characteristics appeared as demographic variables in this study. They are sex, education, age, size of district, income, and organizational membership. In a massive review of literature by Rosenthal and Rosnow, sex appeared to have no relationship to volunteering. District size, education, and income (primary and secondary) were related to volunteering, and no conclusion could be supported for age and organizational membership.

One aspect of this study was to obtain data, as a means of control, that shows no volunteer bias. To do this a comparison of groupings within each demographic variable was made.

Volunteer bias as described above was controlled by random selection and use of a clear concise questionnaire. The volunteer bias factor of the return of the questionnaire by teachers
who have a tendency to volunteer is probably impossible to completely control in a descriptive study.

Instrument

The questionnaire material used in the study was developed from work by Lyman W. Porter (1961). The item format was modified from the Perceived Need-Deficiencies Scale developed by Porter. The major modification consisted of dropping the subscale of "How important is this to me?" from the Porter scale and substituting "How much three years ago?" This was done because the Nevada statutes giving formal negotiating power to teachers was enacted three negotiated contract years prior to the survey. This modification was judged as being useful to gathering data relative to the elapsed time variable of the study. The following is an example of the Porter format contrasted to the modified format.

Porter format:

1. The feeling of security in my position.
   How much is there now? (min) 1 2 3 4 5 6 7 (max)
   How much should there be? (min) 1 2 3 4 5 6 7 (max)
   How important is this to me? (min) 1 2 3 4 5 6 7 (max)

Modified format:

1. The feeling of security in my position.
   How much is there now? (min) 1 2 3 4 5 6 7 (max)
   How much three years ago? (min) 1 2 3 4 5 6 7 (max)
   How much should there be? (min) 1 2 3 4 5 6 7 (max)
Instructions for the completion of the items were not changed.

Lyons and Dickinson (1973) in their study of retrospective reports of job satisfaction as compared with longitudinal data collection support the item format as being a valid data collection procedure. Their conclusion that retrospective perceptions are valid indicators of attitudes over at least a three year time span supports earlier work by Fink (1960) and Hardin (1965).

The instrument consisted of 12 items. The researcher developed 32 original items from Porter (1961) and the review of literature dealing with professional autonomy. The list of possible items was then subjected to a panel of judges composed of professors, graduate students, and school personnel employed in the Tucson, Arizona area. The panel pared the list from 32 to 17 items. The 17 items obtained from this procedure (see Appendix A) were random ordered and then were subjected to a pilot study to establish each item's relationship to factors of professional autonomy. The pilot study was performed in the field with an N of 37 tenured teachers from three local school districts.

A verimax factor analysis of the pilot data was used to develop the final questionnaire. Four factors--Independence, Status, Self-Governance, and Responsibility--were isolated by the factor analysis of the pilot data. Table 1 gives factor loading data from the pilot study.
Table 1. Factor Loadings of Questionnaire Items as Determined by the Pilot Study

<table>
<thead>
<tr>
<th>Factor</th>
<th>Item Number</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Independence</td>
<td>1</td>
<td>.76</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>.85</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>.61</td>
</tr>
<tr>
<td>2. Status</td>
<td>6</td>
<td>.85</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>.61</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>.55</td>
</tr>
<tr>
<td>3. Self-Governance</td>
<td>2</td>
<td>.67</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>.60</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>.60</td>
</tr>
<tr>
<td>4. Responsibility</td>
<td>5</td>
<td>.59</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>.60</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>.75</td>
</tr>
</tbody>
</table>

The factor loadings give the commonality of each item included in a single factor. Guilford (1956) described factor loadings as correlation coefficients. The verimax factor analysis gives correlation coefficients for each of the individual items against all other items. This procedure allowed grouping of individual items to form the four factors of this study.

The panel of judges, in their review of the first 32 questions and development of the 17 item pilot questionnaire, categorized items by factors. The relationship of the factor analysis to the panel judgments for the 12 items used on the final questionnaire was .66. The judges categorized eight of the 12 items
into categories corresponding to the factor analysis categorization.

The four factors and corresponding items obtained by analysis of the pilot study are listed below.

Factor 1—Independence

Items 1, 4, and 11 of the final questionnaire loaded this factor in the pilot study. Below are the items that made up the independence factor for professional autonomy in this study.

1. The responsibility I have as a teacher for intellectual pursuits to improve my teaching.

4. The acceptance of my judgment concerning the proper materials to use in my classroom.

11. The opportunity for independent thought and action in my teaching position.

Factor 2—Status

Items 6, 8, and 9 comprised this factor. The items for the status factor of professional autonomy were:

6. The opportunity afforded me as a teacher in meeting the total needs of my school.

8. The freedom I have to interact as a professional with my administrator.

9. The authority connected with my teaching position.
Factor 3—Self-Governance

Items number 2, 3, and 12 were shown by the pilot data to factor as self-governance. The loadings were constant through all rotations of the factor analysis. The items were:

2. The amount of responsibility I feel to take action concerning unprofessional acts by another teacher.

3. The degree to which teachers of a department or school are consulted in the employment of new teachers for that department or school.

12. The power teachers in my district have to negotiate the salary schedule.

Factor 4—Responsibility

Items 5, 7, and 10 were shown by the factor analysis to contribute the major loadings on this factor of professional autonomy. The item texts for Factor 4 were:

5. The opportunity, in my teaching position, for participation in the determination of methods and procedures.

7. The opportunity, in my teaching position, for participation in the setting of district goals.

10. The opportunity for determining the objectives of my teaching assignment.

Item selection for the final questionnaire was determined solely from the results of the pilot study factor analysis. Random selection was used to order these items on the final or
survey questionnaire. The four factors isolated by the pilot study account for 93% of all variance in the pilot study.

An Individual Data Sheet (see Appendix B) was developed to obtain data relative to selected teacher characteristics. The use of data obtained from the Individual Data Sheet was the inspection of control variables. These variables were referred to as "demographic variables" in this study.

The organization of the Individual Data Sheet and the inclusion of three demographic variables found there was accomplished with assistance of the panel of judges. The three variables established in this manner were:

1. Teaching salary as a primary or secondary source of income.
2. Amount of academic training in educational administration.
3. Formal training in negotiation theory and methods.

All other demographic variables were established by a review of the literature. Variables established through reliance upon frequency in the literature were:

4. Employment in an urban or rural setting.
5. Size of the district where the teacher is employed.
6. Sex of the teacher.
7. Age of the teacher.
8. Work assignment—elementary (K-8) or secondary (9-12).
9. Length of time employed in the same district.
10. Professional organization to which the teacher belongs.
**Sample**

The states of Arizona, California, and Nevada were chosen to represent various conditions of statute and length of practice. Arizona has no statute, but negotiations do take place in the state. California has a generalized position statute with a 10 year history of negotiation practice under statute. Nevada has an explicit statute with a four year history of negotiation practice under statute.

The survey population consisted of a stratified random sample of 1,040 teachers in the three state area of Arizona (N=500), Nevada (N=200), and California (N=340). The sample was stratified by the major variable of state along with the variables of large district versus small district, (size) and urban versus rural location. Figure 1 gives a graphic representation of stratification and Table 2 presents stratification data in chart form.

**Collection of Data**

Data were collected during the months of April and May of 1975. The collection was accomplished by use of a survey packet mailer. The survey packet consisted of the cover letter, individual data sheet, instruction sheet, the two page questionnaire, and return envelope (see Appendix B). It was randomly distributed to teachers who had worked in their respective districts for three or more years. Districts were chosen in a random manner. District superintendents or their designated representatives were contacted to assist in distribution of the survey packet.
Figure 1. Sample Stratification Diagram for Treatment by Blocks Design
Twenty-six districts in Arizona were contacted. Three (11%) chose not to participate. Nine districts in Nevada were contacted and all participated. Twenty-seven districts in California were contacted and 23 participated. Four (15%) did not participate. Totals are 62 districts contacted with seven (11%) not participating. Of those districts contacted and not-participating, three stated it was district policy not to participate in surveys. Four districts gave their reason for refusal as being involved in sensitive negotiations at the time.

The return rate for the population of 1,040 teachers was 63%. The useable or unspoiled return was 60% or 620 questionnaires. Thirty of the returned questionnaires were incomplete giving a spoilage of approximately 3%.

Return rates and spoilage data for all design conditions may be seen and calculated from Table 2.

Random sampling of teachers within districts was used to control intradistrict bias. Sampling was done at the district level by use of a table of random numbers. The smallest participating district contained 12 teachers of which one was sampled. The largest district contained approximately 4,500 teachers with a sample of 50 teachers taken. The stratification of the sample was proportional for the district level by size, and location but absolute proportionality could not be maintained within the district teaching staff.
Table 2. Sample Size, Return, and Spoilage Percentage for Subgroups by State/Location/Size of District

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Code</th>
<th>No. Sent</th>
<th>No. Returned</th>
<th>% Return</th>
<th>No. Spoiled</th>
<th>% Spoilage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arizona</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban/Large (AUL)</td>
<td>150</td>
<td>121</td>
<td>81</td>
<td>5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Urban/Small (AUS)</td>
<td>100</td>
<td>62</td>
<td>62</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Rural/Large (ARL)</td>
<td>150</td>
<td>101</td>
<td>67</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Rural/Small (ARS)</td>
<td>100</td>
<td>66</td>
<td>66</td>
<td>3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>California</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban/Large (CUL)</td>
<td>100</td>
<td>46</td>
<td>46</td>
<td>4</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Urban/Small (CUS)</td>
<td>70</td>
<td>37</td>
<td>53</td>
<td>3</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Rural/Large (CRL)</td>
<td>100</td>
<td>52</td>
<td>52</td>
<td>5</td>
<td>5</td>
<td></td>
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<tr>
<td>Rural/Small (CRS)</td>
<td>70</td>
<td>44</td>
<td>63</td>
<td>1</td>
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<tr>
<td>Nevada</td>
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<td></td>
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<tr>
<td>Urban/Large (NUL)</td>
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<td>38</td>
<td>54</td>
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<tr>
<td>Urban/Small (NUS)</td>
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<td>16</td>
<td>53</td>
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<td>Rural/Large (NRL)</td>
<td>70</td>
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<td>83</td>
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<tr>
<td>Rural/Small (CRS)</td>
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<td>17</td>
<td>56</td>
<td>1</td>
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<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>520</td>
<td>320</td>
<td>61</td>
<td>16</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>520</td>
<td>338</td>
<td>65</td>
<td>14</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>640</td>
<td>416</td>
<td>65</td>
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</tr>
<tr>
<td>Large</td>
<td>400</td>
<td>242</td>
<td>61</td>
<td>10</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Small</td>
<td>200</td>
<td>129</td>
<td>65</td>
<td>5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Arizona</td>
<td>500</td>
<td>350</td>
<td>70</td>
<td>12</td>
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</tr>
<tr>
<td>California</td>
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<td>179</td>
<td>53</td>
<td>13</td>
<td>4</td>
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<tr>
<td>Nevada</td>
<td>200</td>
<td>129</td>
<td>65</td>
<td>5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>1040</td>
<td>658</td>
<td>63</td>
<td>30</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>
In some districts randomness of sample had to be left to the district staff due to time and distance factors. The researcher conducted the random sample procedure in 41 (75%) of the participating districts.

All individual survey packets were coded by the 12 sub-grouping codes seen in Table 2. No code was used to identify individual districts and no attempt was made to identify any characteristics of teachers except those included on the survey packet Individual Data Sheet.

**Treatment of the Data**

Three basic scores were obtained through the data collection. Each factor was scored with a baseline score—score c. This score came from the question, "How much should there be?" in the questionnaire. Score a was a measure collected by the question, "How much is there now?", and score b was collected by the question, "How much three years ago?"

It was recognized that scores derived from a-b, c-a, and c-b could also be used as data. These derived scores are used where applicable. The use of all scores is treated in the applicable sections of Chapter 4.
Statistical Procedures

Analysis of Variance

Statistical techniques consisted of analysis of variance for all factors (treatments) against all variables (blocks). A hierarchical ANOVA format was used. The choice of this as the major statistic was made to complement the "treatment by blocks" design. Myers (1966, p. 212) described the hierarchical format for the analysis of variance as satisfying treatment effects, group effects, and residual individual differences. The residual individual differences aspect is important to control of volunteer bias. The use of this format also satisfies the assumption that "an individual's score is in part contributed to by the social group in which he participates (Myers 1966, p. 213)." It is certainly possible that some of the teachers involved in this study come from small enough social orientation groups that their scores might have been affected. The hierarchical ANOVA format best controls for error sources likely to occur in the design of this study.

Relationships that showed an F on the analysis of variance which was significant at or beyond the .05 level were submitted to t-test procedures where appropriate. The .05 level of significance was accepted for the reporting of all results. Both the .05 and the .01 levels were identified on tables in the results section. Discussion of results was confined to comparisons that yielded .05 or better levels of significance.
Dunn and Clark (1974, p. 32) and Lindquist (1956, p. 72) outlined assumptions necessary to the use of analysis of variance and t-test statistics. The statistical procedures satisfy these assumptions:

1. Each group was originally drawn at random from the corresponding level of the given population with the number drawn being proportional to the number of individuals at that level.
2. The distribution of criterion measures for each group is normal.
3. Each of the groups sampled has the same variance distribution.
4. Means of the groups corresponding to the treatments are identical.

To meet these assumptions the following procedures were used:

Assumption 1 was met by random sampling each district and the teachers within that district after the proportional representation for each state had been established.

Assumption 2 was met by the finding that normal distributions existed for the total population and the major variable groupings that were represented proportionally. Some skewness occurred in demographic variable subgroups but such skewness can be attributed to a relatively small number of subjects that fell randomly to these subgroups.
Assumptions 3 and 4 are involved in establishing the unspoken null hypothesis. In this study the assumptions were met by care in assuring random sampling relative to the major variables as diagrammed in Figure 1.

T-Test

Guilford (1956), in discussing ANOVA usage, outlined the use of t-test statistics following the finding of a significant F. The t-test procedures are necessary to isolate which pairs of the ANOVA list of means are disparate enough to contribute a significance to F. The ANOVA tells us "that there are nonchance variations among means somewhere in a list of sets; we do not know how many or which ones are significantly different (Guilford 1956, p. 263)." The t-test was designed and was used here to compare mean pairs from the ANOVA list of sets.

Summary

This chapter discussed the design of the study. It described both the limitations of a "pre-experimental" design and the steps taken to meet the assumptions necessary for control. The limitations are great enough to rule out absolute control. The meeting of necessary assumptions does satisfy the requirements of "pre-experimental" design and makes this study useful as a means of describing the relationships surrounding the chosen variables.
CHAPTER 4

ANALYSIS OF DATA

The data analyzed and discussed in this chapter were obtained by the methods and procedures described in Chapter 3. The raw scores obtained from teacher responses to the survey questionnaire (see Appendix B) become the raw data for measuring teacher perceptions of professional autonomy. Before the results and discussion of results are tendered an explanation of the scores is presented, followed by an explanation of the form of presentation of analyzed data.

**Explanation of Scores**

The summary table (Table 3) for the main or "state" variable makes use of scores a, b, c, and the derived scores (c-a) and (a-b). The origin of these scores in the questionnaire is:

Score a--How much (of the factor) is there presently?
Score b--How much (of the factor) was there three years ago?
Score c--How much (of the factor) should there be?
Score (c-a)--the derived difference score of How much should there be? versus How much is there presently?
Score (a-b)--the derived difference score of How much is there presently? versus How much three years ago?
Score c (How much should there be?) is a baseline score. A control was needed for shifts in this baseline. Comparison of the direct scores (scores a and c) did not offer a statistical procedure useful in reporting such shifts in this section of the results. More meaningful results were obtained by the use of score c as the baseline for a difference score. The derived score (c-a), which shows the difference between perceptions of how much of a factor there should be and how much of a factor there presently is, was used. The use of (c-a) as a score was necessary because of the possibility that non-significant differences on score c and score a could be reported, but the difference between score a and score c for a given group could be significant. Figure 2 presents a line graph which shows this concept.

The (c-a) score is an accepted means of control for differences in the direction of means. It allows the application of normal curve statistical methods to the single score that controls for such differences of direction in means.

The derived score (a-b) was used in a manner similar to score (c-a). It allowed comparison of changes in perceived professional autonomy over the past three years. The importance of this score was that the state of Nevada had a negotiations law for three years prior to data collection. This study sought to compare any differences in perception of professional autonomy that might be related to time factors surrounding the passage of state statute.
Mean score units

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<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
</table>

Group 1 means

1

Group 2 means

2

Score a

= 1 unit of difference

Possibly non-significant

Score c

= 1 unit of difference

Possibly non-significant

Score (c-a) = 2 units of difference

Possibly significant

Figure 2. Illustration Demonstrating the Use of (c-a) as a Reportable Score
Presentation of Data

Data are presented in both tabular and narrative form. After each table a narrative describing the results shown by the table is given. Discussion is restricted to those results which are found to be statistically significant beyond the .05 level. The .01 level results are noted in tables but are not discussed separately.

ANOVA tables show each of the four factors of professional autonomy used in this study. Independence, Status, Self-Governance, and Responsibility are charted for each of the variables in this study. Table 3 is the primary table. It describes the data for perceived professional autonomy of teachers relative to state of residence. T-test tables follow Table 3 so that means for states may be compared individually and origin of significance can be determined.

A second group of tables (Tables 8 through 18) is oriented to the demographic variables. Size, location, age, sex, assignment, longevity, income, organizational affiliation, educational administration course work, and negotiation training are described relative to the four factors of professional autonomy.

T-test tables follow the ANOVA summary tables for the demographic variables where significant findings appear. T-tests are given only for significantly differing ANOVA's.
Analysis of Data

A primary concern of this study was to describe how teacher perceptions of professional autonomy differ between the states of Arizona, California, and Nevada. This variable and its possible relationship to conditions surrounding negotiation was discussed in Chapter 2.

Table 3 shows that there are definitive differences between states in the amount of perceived professional autonomy as defined in this study.

Due to the finding of significant differences between all scores in this summary table of ANOVA results discussion of between state results was delayed until after the t-test tables which follow.

Table 4 is a t-test table that displays the results of comparisons between California teachers and Arizona teachers. The California figures represent perceptions of teachers under existing statute for a relatively long period of time. The Arizona figures represent perceptions of teachers working under no statutes.

California teachers perceived higher degrees of all four factors of professional autonomy than did Arizona teachers as shown in Table 5. This holds for scores a, b, and c. Arizona teachers perceived more difference between how much of each factor there should be and how much there presently is than did California teachers. The (c-a) score is consistently higher for
Table 3. Summary Table of ANOVA Results for the State Variable

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<tr>
<th>Factor</th>
<th>Score</th>
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<th>Ariz.</th>
<th>Cal.</th>
<th>Nev.</th>
<th>ss</th>
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<td>17.18</td>
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<td>71.10</td>
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<td>312.19</td>
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*.05 level.

**.01 level.
Table 4. Summary of t-Test Comparisons between Arizona and California for All Factors

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</table>

*Significance.
Arizona teachers than for California teachers. Here the importance of the (c-a) score is seen. California teachers were consistently higher on the a, b, and c scores, but Arizona teachers were perceptive of a greater difference between how much of each factor they felt there should be and how much there presently is. Such a result suggests that conditions of professional autonomy in the California sample were closer to what California teachers perceived as optimal than was the case in the Arizona sample.

The (a-b) score showed two differences in perceptions. California teachers perceived a greater change in self-governance and responsibility over the last three years than did Arizona teachers. The limited significance was expected here due to the design of the study. Score b was included in the study primarily to assess changes that may have occurred in the perceptions of professional autonomy of Nevada teachers following the 1972 passage of the Local Government Employee-Management Relations Act in Nevada.

Table 5 gives the results of t-test comparison between teachers from Arizona and from Nevada. Perceptions of Arizona teachers who work under no statute are compared here with perceptions of Nevada based teachers who come under a state statute which has had effect for three years.

Table 5 shows that Arizona and Nevada teachers in the sample were more similar in their perceptions of professional autonomy than were Arizona and California teachers sampled.
Table 5. Summary of t-Test Comparisons between Arizona and Nevada for All Factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Score</th>
<th>Mean</th>
<th></th>
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<th>Probability</th>
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<td>a</td>
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<td>12.94</td>
<td></td>
<td>3.44</td>
<td>.001*</td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>13.13</td>
<td>12.18</td>
<td></td>
<td>2.16</td>
<td>.03*</td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>18.45</td>
<td>18.69</td>
<td></td>
<td>-1.01</td>
<td>.31</td>
<td></td>
</tr>
<tr>
<td>(c-a)</td>
<td>4.02</td>
<td>5.75</td>
<td></td>
<td>-4.14</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td>(a-b)</td>
<td>1.30</td>
<td>0.76</td>
<td></td>
<td>1.94</td>
<td>.05*</td>
<td></td>
</tr>
</tbody>
</table>

*Significance.
Nevada teachers perceived a significantly higher degree of how much independence there should be than did Arizona teachers.

Arizona teachers perceived responsibility to have increased over the last three years to a higher degree than did Nevada teachers. The Arizona sample was significantly higher in its perceptions of responsibility than were Nevada teachers on scores a, b, (c-a), and (a-b). With the baseline score of score c, showing no real difference in perceptions, the question of why perceived responsibility has increased in the Arizona sample and not in the Nevada sample over the last three years seems worth asking. It cannot be answered by this study but may offer a future area for research relating to the initial period of negotiations as it affects perceptions of responsibility.

Table 6 shows the t-test findings for comparisons between the California sample and the Nevada sample. Teachers in both states work under collective negotiations statute. The statutes vary in conditions and have been in use for differing lengths of time.

California teachers perceived higher degrees of status, self-governance, and responsibility as existing presently (score a) than did Nevada teachers. California teachers perceived that there should be (score c) greater amounts of self-governance than did Nevada teachers in this study. There were no significant statistical differences obtained for score c relative to independence, status, or responsibility.
Table 6. Summary of t-Test Comparisons between California and Nevada for All Factors

<table>
<thead>
<tr>
<th>Factor</th>
<th>Score</th>
<th>Mean</th>
<th>Cal.</th>
<th>Nev.</th>
<th>t Value</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Independence</td>
<td>a</td>
<td>17.18</td>
<td>16.54</td>
<td>1.65</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>16.28</td>
<td>15.56</td>
<td>1.61</td>
<td>.11</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>19.25</td>
<td>19.40</td>
<td>-0.69</td>
<td>.49</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>2.07</td>
<td>2.86</td>
<td>-2.14</td>
<td>.03*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(a-b)</td>
<td>0.90</td>
<td>0.98</td>
<td>-0.23</td>
<td>.82</td>
<td></td>
</tr>
<tr>
<td>2. Status</td>
<td>a</td>
<td>15.27</td>
<td>13.61</td>
<td>3.24</td>
<td>.001*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>14.33</td>
<td>12.78</td>
<td>2.95</td>
<td>.003*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>19.13</td>
<td>18.78</td>
<td>1.30</td>
<td>.19</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>3.87</td>
<td>5.17</td>
<td>-2.51</td>
<td>.01*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(a-b)</td>
<td>0.93</td>
<td>0.82</td>
<td>0.24</td>
<td>.81</td>
<td></td>
</tr>
<tr>
<td>3. Self-Governance</td>
<td>a</td>
<td>10.62</td>
<td>9.20</td>
<td>3.24</td>
<td>.001*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>8.96</td>
<td>7.87</td>
<td>2.75</td>
<td>.006*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>16.84</td>
<td>15.65</td>
<td>2.86</td>
<td>.005*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>6.21</td>
<td>6.44</td>
<td>-0.47</td>
<td>.64</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(a-b)</td>
<td>1.66</td>
<td>1.33</td>
<td>0.94</td>
<td>.35</td>
<td></td>
</tr>
<tr>
<td>4. Responsibility</td>
<td>a</td>
<td>16.74</td>
<td>12.94</td>
<td>8.78</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>14.83</td>
<td>12.18</td>
<td>5.59</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>19.11</td>
<td>18.69</td>
<td>1.66</td>
<td>.10</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>2.91</td>
<td>5.75</td>
<td>-7.56</td>
<td>.000*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(a-b)</td>
<td>1.92</td>
<td>0.76</td>
<td>4.31</td>
<td>.02*</td>
<td></td>
</tr>
</tbody>
</table>

*Significance.
On score b (how much was there three years ago), differences were obtained for the professional autonomy variables of status, self-governance, and responsibility. For each of these variables the mean of the California sample was larger than the mean of the Nevada sample. To determine any meaningful relationship here the derived score (a-b) was inspected. Differences on (a-b) were apparent only for responsibility. This result suggests that with California teachers scoring higher in perceptions of both a and b scores there is a constancy of scale deviation. In other words, for the variables of status and independence the obtained differences reflect changes prior to the last three years. It is interesting to note that the Nevada sample perceived little change in responsibility since the passage of the Nevada negotiations act for teachers. This relationship is further complicated by the large differences found on the (c-a) score. Nevada teachers perceived a much higher difference between how much responsibility there should be and how much there presently is. Close inspection of the means showed that the major portion of this perceived difference is due to a startlingly lower perception of how much responsibility there is presently (score a). Of the 5.75 figure obtained for the Nevada sample, 3.80 is attributable to score a properties. This suggests that since the passage of the Nevada negotiations statute, perceptions of "how much responsibility teachers have" has either diminished or at least not increased. The (c-a) score for the status variable
approximates the relationships found for the responsibility variable. Nevada teachers seem to perceive a loss of both status and responsibility during the time since their inclusion in the Local Government Employee-Management Relations Act in 1971.

**Demographic Variables**

The primary function of the demographic variables was control. Table 7 illustrates that the selected demographic variables did not account for the significant results obtained for the state of residence variable.

Table 7 shows that the effect of any single demographic variable upon the major variable cannot account for the magnitude of significance attached to state of residence. It is remotely possible that the across the board results obtained for the state variable could come from a combination of more than one demographic variable. Guilford (1956, p. 257) in discussing interpretation of ANOVA data made the point that a normal distribution of chance significance exists, consequently a combination effect is unlikely.

Table 7 is a summary which shows the occurrence of any statistical difference that occurs for each score, factor, and demographic variable in the study. The age variable has a statistical difference occurring only between the age groups of 30-39 and 60 or above for factor 1, score 6. Age has four statistically different findings occurring from a total of 80 possible
Table 7. Occurrence of One or More ANOVA Statistical Differences by Variable

<table>
<thead>
<tr>
<th>Factor</th>
<th>Score</th>
<th>State</th>
<th>Location</th>
<th>Size</th>
<th>Age</th>
<th>Sex</th>
<th>Longevity</th>
<th>Assignment</th>
<th>Income</th>
<th>Organization</th>
<th>Educ. Admin.</th>
<th>Negotiations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Independence</td>
<td>a</td>
<td>X*</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<tr>
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<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Status</td>
<td>a</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>X</td>
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<td>X</td>
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<td></td>
<td>X</td>
</tr>
<tr>
<td>3. Self-Governance</td>
<td>a</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td></td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Responsibility</td>
<td>a</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td>X</td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*X* = statistical difference.
comparisons. The number of comparisons represented for all variables in Table 7 is 480.

While Table 7 shows that the majority of demographic variables could not have contributed the found significance for the state variable, it does not detail the findings relative to the demographic variables. Such detail was of no great importance to the major findings of this study. It was of interest however and may serve to suggest areas of further research into the topic of professional autonomy. For this reason the demographic variable results were organized in much the same manner as the results of the state variable. Demographic variable results are given in ANOVA form in Tables 8 through 17. Supplemental tables showing t-test results are included to clarify results where it is necessary.

Table 8 deals with the location variable. The categories of urban and rural (see definitions) were compared by use of ANOVA procedures and the results of these comparisons comprise Table 8.

The single ANOVA significance found for the location variable relates to how much status there presently is. Rural teachers perceive themselves as having higher status than do urban teachers. An obvious interpretation of this is that teachers are less noticeable in the urban community. Jackson (1970) felt that such a finding may be due to fewer "professional" workers in rural settings and consequently greater deference being shown educated persons.
<table>
<thead>
<tr>
<th>Factor</th>
<th>Score</th>
<th>Urban</th>
<th>Rural</th>
<th>ss</th>
<th>df</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Independence</td>
<td>a</td>
<td>16.42</td>
<td>16.52</td>
<td>0.89</td>
<td>1</td>
<td>0.08</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>15.60</td>
<td>15.62</td>
<td>0.11</td>
<td>1</td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>18.99</td>
<td>19.07</td>
<td>0.92</td>
<td>1</td>
<td>0.11</td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>2.57</td>
<td>2.56</td>
<td>0.001</td>
<td>1</td>
<td>0.000</td>
</tr>
<tr>
<td>2. Status</td>
<td>a</td>
<td>13.69</td>
<td>14.39</td>
<td>72.00</td>
<td>1</td>
<td>4.03*</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>13.09</td>
<td>13.36</td>
<td>10.96</td>
<td>1</td>
<td>0.59</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>18.56</td>
<td>18.91</td>
<td>3.26</td>
<td>1</td>
<td>0.47</td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>4.87</td>
<td>4.52</td>
<td>15.60</td>
<td>1</td>
<td>0.98</td>
</tr>
<tr>
<td>3. Self-Governance</td>
<td>a</td>
<td>9.23</td>
<td>9.70</td>
<td>35.67</td>
<td>1</td>
<td>2.79</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>8.22</td>
<td>8.47</td>
<td>9.07</td>
<td>1</td>
<td>0.79</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>16.00</td>
<td>16.48</td>
<td>32.91</td>
<td>1</td>
<td>2.18</td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>6.78</td>
<td>6.78</td>
<td>0.10</td>
<td>1</td>
<td>0.001</td>
</tr>
<tr>
<td>4. Responsibility</td>
<td>a</td>
<td>14.58</td>
<td>14.99</td>
<td>22.21</td>
<td>1</td>
<td>1.66</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>13.48</td>
<td>13.36</td>
<td>2.59</td>
<td>1</td>
<td>0.18</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>18.64</td>
<td>18.69</td>
<td>0.74</td>
<td>1</td>
<td>0.09</td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>4.05</td>
<td>3.70</td>
<td>16.33</td>
<td>1</td>
<td>1.33</td>
</tr>
</tbody>
</table>

*Significance.
Table 9 summarizes findings for the size variable. Small districts were those with 200 or less teachers and large districts those with more than 200 teachers employed.

Table 9 shows that teachers in large districts perceived significantly higher degrees of how much status there should be compared to how much there presently is (score c-a). Teachers in large districts may perceive more self-governance simply because of their greater number. They may have more power to obtain self-governance or the administrators of the district may not have the resources to govern or supervise individual teachers closely.

The findings concerning status may be related to the dynamics discussed above. Teachers in large districts must compete for status with a proportionately larger number of well educated professionals than those in small districts. This could easily result in large district teachers perceiving the need for an increase in the status of all teachers in their community.

The variable described in Table 10 is age. There were five age divisions used: 20-29, 30-39, 40-49, 50-59, and 60 and above.

Table 10 shows three significant ANOVA results. Because there were more than two means involved in each set of means it was necessary to use t-test procedures to isolate the statistical differences. Table 11 shows the results of this procedure.
Table 9. Summary Table of ANOVA Results for the Size Variable

<table>
<thead>
<tr>
<th>Factor</th>
<th>Score</th>
<th>Mean</th>
<th>Large</th>
<th>Small</th>
<th>ss</th>
<th>df</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Independence</td>
<td>a</td>
<td>16.30</td>
<td>16.75</td>
<td>20.80</td>
<td>1</td>
<td>1.86</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>15.40</td>
<td>15.95</td>
<td>34.74</td>
<td>1</td>
<td>2.55</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>18.98</td>
<td>19.12</td>
<td>13.58</td>
<td>1</td>
<td>2.01</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>2.96</td>
<td>2.48</td>
<td>14.31</td>
<td>1</td>
<td>0.20</td>
<td></td>
</tr>
<tr>
<td>2. Status</td>
<td>a</td>
<td>13.86</td>
<td>14.34</td>
<td>12.81</td>
<td>1</td>
<td>0.72</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>13.07</td>
<td>13.47</td>
<td>9.00</td>
<td>1</td>
<td>0.48</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>20.79</td>
<td>19.89</td>
<td>29.14</td>
<td>1</td>
<td>1.67</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>5.45</td>
<td>4.56</td>
<td>66.31</td>
<td>1</td>
<td>4.14*</td>
<td></td>
</tr>
<tr>
<td>3. Self-Governance</td>
<td>a</td>
<td>9.56</td>
<td>9.31</td>
<td>23.72</td>
<td>1</td>
<td>1.85</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>8.26</td>
<td>8.47</td>
<td>1.50</td>
<td>1</td>
<td>0.13</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>18.11</td>
<td>16.98</td>
<td>78.16</td>
<td>1</td>
<td>3.87*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>7.38</td>
<td>7.07</td>
<td>3.42</td>
<td>1</td>
<td>0.23</td>
<td></td>
</tr>
<tr>
<td>4. Responsibility</td>
<td>a</td>
<td>14.60</td>
<td>15.10</td>
<td>4.68</td>
<td>1</td>
<td>0.35</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>13.27</td>
<td>13.66</td>
<td>4.28</td>
<td>1</td>
<td>0.29</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>20.66</td>
<td>19.96</td>
<td>23.86</td>
<td>1</td>
<td>1.91</td>
<td></td>
</tr>
<tr>
<td></td>
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</tbody>
</table>

*Significance.
Table 10. Summary Table of ANOVA Results for the Age Variable

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<th>Mean</th>
<th>20-29</th>
<th>30-39</th>
<th>40-49</th>
<th>50-59</th>
<th>60+</th>
<th>ss</th>
<th>df</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
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<td>16.38</td>
<td>16.53</td>
<td>16.59</td>
<td>16.61</td>
<td>6.68</td>
<td>4</td>
<td>0.14</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>15.72</td>
<td>15.46</td>
<td>15.89</td>
<td>15.94</td>
<td>16.30</td>
<td>140.38</td>
<td>4</td>
<td>2.57*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c</td>
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<td>19.08</td>
<td>18.93</td>
<td>18.89</td>
<td>18.77</td>
<td>18.53</td>
<td>4</td>
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<td>46.30</td>
<td>4</td>
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<td></td>
</tr>
<tr>
<td>Status</td>
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<td>14.04</td>
<td>14.01</td>
<td>14.47</td>
<td>13.05</td>
<td>70.31</td>
<td>4</td>
<td>0.94</td>
<td></td>
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<tr>
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<td>b</td>
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<td>13.48</td>
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<td>13.88</td>
<td>203.95</td>
<td>4</td>
<td>2.71*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>19.10</td>
<td>18.92</td>
<td>18.69</td>
<td>18.62</td>
<td>17.59</td>
<td>73.25</td>
<td>4</td>
<td>3.99*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>5.03</td>
<td>4.89</td>
<td>4.68</td>
<td>4.16</td>
<td>4.55</td>
<td>46.81</td>
<td>4</td>
<td>0.71</td>
<td></td>
</tr>
<tr>
<td>Self-Governance</td>
<td>a</td>
<td>9.75</td>
<td>9.72</td>
<td>9.39</td>
<td>9.27</td>
<td>8.55</td>
<td>56.98</td>
<td>4</td>
<td>1.03</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>8.16</td>
<td>8.15</td>
<td>8.53</td>
<td>8.02</td>
<td>8.21</td>
<td>30.58</td>
<td>4</td>
<td>0.64</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>16.23</td>
<td>16.70</td>
<td>16.21</td>
<td>16.13</td>
<td>14.82</td>
<td>85.16</td>
<td>4</td>
<td>2.04</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>6.49</td>
<td>6.98</td>
<td>6.82</td>
<td>6.85</td>
<td>6.27</td>
<td>14.29</td>
<td>4</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td>Responsibility</td>
<td>a</td>
<td>14.98</td>
<td>15.04</td>
<td>14.45</td>
<td>14.99</td>
<td>14.04</td>
<td>60.24</td>
<td>4</td>
<td>0.88</td>
<td></td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>12.77</td>
<td>13.37</td>
<td>13.47</td>
<td>13.78</td>
<td>13.89</td>
<td>71.60</td>
<td>4</td>
<td>1.13</td>
<td></td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>18.80</td>
<td>18.87</td>
<td>18.71</td>
<td>18.37</td>
<td>18.16</td>
<td>30.08</td>
<td>4</td>
<td>1.75</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>3.83</td>
<td>3.82</td>
<td>4.25</td>
<td>3.38</td>
<td>4.11</td>
<td>56.41</td>
<td>4</td>
<td>1.02</td>
<td></td>
</tr>
</tbody>
</table>

*Significance.
Table 11. T-Test Results for ANOVA Significance for the Age Variable by Factor

<table>
<thead>
<tr>
<th>Factor</th>
<th>Score</th>
<th>Age Groups</th>
<th>df</th>
<th>t</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independence</td>
<td>b</td>
<td>2 vs. 5</td>
<td>153</td>
<td>4.15</td>
<td>.01</td>
</tr>
<tr>
<td>Status</td>
<td>b</td>
<td>1 vs. 4</td>
<td>168</td>
<td>3.81</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 vs. 5</td>
<td>145</td>
<td>2.94</td>
<td>.03</td>
</tr>
<tr>
<td>Status</td>
<td>c</td>
<td>1 vs. 5</td>
<td>145</td>
<td>3.50</td>
<td>.01</td>
</tr>
</tbody>
</table>

On the Independence factor, score b difference was obtained between teachers in the 30-39 age category and the 60 and above category. This finding is that teachers aged 30-39 perceive significantly less independence in the last three years than do teachers 60 and above.

The relationships for Status involve only the 20-29 age group. On the question of how much status there was three years ago, the 20-29 age group perceived lower status than did groups of teachers aged 50-59 and 60 and above. The 20-29 age groups perceived that there should be significantly more status given teachers than did the 60 and above teachers.

It is not surprising to find that young people just starting out as teachers perceive less status and less independence than veteran teachers. Their perceptions of less status are supported by the real world of the school, where the younger or newer teachers very often receive work assignments that
reflect lack of autonomy. Alluto and Belasco (1972) and Miskel (1973) found a desire for decision making and autonomy in young teachers which is unfulfilled.

The parallel between the findings for the age variable and the longevity variable in this study support these views. The findings of Hall and Mansfield (1975) which showed differences between workers with short experience and long experience are worth noting here. The variables in the Hall and Mansfield work were security and autonomy. Workers with long experience thought they had higher levels of each than did workers with short experience. This study dealt with autonomy and supported the Hall and Mansfield finding. It may be that security is a prerequisite for feelings of autonomy in teachers. Older teachers who have longer experience are more likely to have more security and this security factor, as was suggested by Hall and Mansfield, may give such teachers more perceived autonomy.

Table 12 summarizes sex differences concerning perceptions of professional autonomy. t-test procedures were not necessary because the sets of means contain only two means for comparison.

The significant results that related to sex of the responding teachers center around self-governance. Females perceive lower amounts of how much self-governance there should be and lower degrees of self-governance three years ago than do males. This significance of the (c-a) score is related to the
Table 12. Summary Table of ANOVA Results for the Sex Variable

<table>
<thead>
<tr>
<th>Factor</th>
<th>Score</th>
<th>Mean</th>
<th>Female</th>
<th>Male</th>
<th>ss</th>
<th>df</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Independence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>16.49</td>
<td>16.45</td>
<td>0.61</td>
<td>1</td>
<td>0.005</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>15.40</td>
<td>15.92</td>
<td>45.16</td>
<td>1</td>
<td>3.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>19.05</td>
<td>19.00</td>
<td>0.58</td>
<td>1</td>
<td>0.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c-a)</td>
<td>2.56</td>
<td>2.55</td>
<td>0.27</td>
<td>1</td>
<td>0.03</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>14.16</td>
<td>13.86</td>
<td>17.61</td>
<td>1</td>
<td>0.94</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>13.19</td>
<td>13.28</td>
<td>4.32</td>
<td>1</td>
<td>0.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>18.62</td>
<td>18.92</td>
<td>6.26</td>
<td>1</td>
<td>1.36</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c-a)</td>
<td>4.46</td>
<td>5.05</td>
<td>44.85</td>
<td>1</td>
<td>2.72</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Self-Governance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>9.37</td>
<td>9.61</td>
<td>3.04</td>
<td>1</td>
<td>0.22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>8.11</td>
<td>8.69</td>
<td>55.67</td>
<td>1</td>
<td>4.69*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c</td>
<td>15.82</td>
<td>16.90</td>
<td>126.37</td>
<td>1</td>
<td>12.08**</td>
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<td></td>
</tr>
<tr>
<td>(c-a)</td>
<td>6.45</td>
<td>7.29</td>
<td>90.22</td>
<td>1</td>
<td>6.18*</td>
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<td></td>
</tr>
<tr>
<td>4. Responsibility</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a</td>
<td>14.70</td>
<td>14.93</td>
<td>4.13</td>
<td>1</td>
<td>0.27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b</td>
<td>13.14</td>
<td>13.85</td>
<td>85.01</td>
<td>1</td>
<td>5.38*</td>
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<td></td>
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<tr>
<td>c</td>
<td>18.63</td>
<td>18.74</td>
<td>0.24</td>
<td>1</td>
<td>0.06</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c-a)</td>
<td>3.93</td>
<td>3.81</td>
<td>2.37</td>
<td>1</td>
<td>0.17</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* .05 level.

** .01 level.
difference in how much there should be. There is no perceived difference between the sexes as to how much self-governance there is presently. Obviously the significance of (c-a) comes from the differences on score a, how much self-governance there should be. Females perceived less responsibility three years ago than did males.

A pattern exists here which gives some support to the contention that the passage of a law may influence perceptions as well as practice. The Civil Rights Amendments of 1972 clearly advocated equality of conditions of employment between men and women. Three years later this study obtained results that support the idea of that law affecting perceptions of self-governance. The lack of significant findings for the other factors may denote the process of the societal changes that Alexander and Eckland (1974) felt will increasingly limit sex differences.

Table 13 gives the results obtained for the longevity variable. This variable was defined as length of employment in the teacher's present district. Five categories were investigated: 0-5, 6-10, 11-15, 16-20, and more than 20 years service.

Table 13 concerned the longevity variable. The table summarizes data that parallel the data reported for the age variable. These two variables seem to have functioned as a single variable in this study. Such a possibility was discussed by the panel of judges prior to the establishment of these
Table 13. Summary Table of ANOVA Results for the Longevity Variable

<table>
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<th>Factor</th>
<th>Score</th>
<th>0-5</th>
<th>6-10</th>
<th>11-15</th>
<th>16-20</th>
<th>20+</th>
<th>ss</th>
<th>df</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
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<td>1. Independence</td>
<td>a</td>
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<td>16.68</td>
<td>16.22</td>
<td>16.59</td>
<td>17.37</td>
<td>64.73</td>
<td>4</td>
<td>1.45</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>14.85</td>
<td>15.79</td>
<td>15.82</td>
<td>15.86</td>
<td>16.82</td>
<td>154.32</td>
<td>4</td>
<td>2.91*</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>19.18</td>
<td>19.12</td>
<td>18.66</td>
<td>18.98</td>
<td>19.17</td>
<td>22.67</td>
<td>4</td>
<td>1.60</td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>3.04</td>
<td>2.44</td>
<td>2.44</td>
<td>2.39</td>
<td>1.80</td>
<td>61.41</td>
<td>2</td>
<td>1.78</td>
</tr>
<tr>
<td>2. Status</td>
<td>a</td>
<td>13.83</td>
<td>14.21</td>
<td>13.68</td>
<td>14.55</td>
<td>14.45</td>
<td>50.62</td>
<td>4</td>
<td>0.69</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>12.21</td>
<td>13.46</td>
<td>13.27</td>
<td>14.09</td>
<td>14.80</td>
<td>323.30</td>
<td>4</td>
<td>4.38**</td>
</tr>
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<td>c</td>
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<td>18.84</td>
<td>18.29</td>
<td>18.45</td>
<td>18.93</td>
<td>49.71</td>
<td>4</td>
<td>2.73*</td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>5.18</td>
<td>4.62</td>
<td>4.62</td>
<td>3.91</td>
<td>4.47</td>
<td>83.29</td>
<td>4</td>
<td>1.27</td>
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<td>b</td>
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<td>8.57</td>
<td>8.67</td>
<td>8.92</td>
<td>42.35</td>
<td>4</td>
<td>0.92</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>16.18</td>
<td>16.46</td>
<td>16.27</td>
<td>15.70</td>
<td>16.15</td>
<td>25.22</td>
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<td>0.59</td>
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<td></td>
<td>(c-a)</td>
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<td>6.93</td>
<td>6.86</td>
<td>6.11</td>
<td>6.65</td>
<td>36.23</td>
<td>4</td>
<td>0.61</td>
</tr>
<tr>
<td>4. Responsibility</td>
<td>a</td>
<td>14.57</td>
<td>14.97</td>
<td>14.48</td>
<td>15.25</td>
<td>15.03</td>
<td>36.36</td>
<td>4</td>
<td>0.63</td>
</tr>
<tr>
<td></td>
<td>b</td>
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<td>177.76</td>
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<td>1.74</td>
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<td></td>
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<td>18.87</td>
<td>18.83</td>
<td>18.46</td>
<td>18.35</td>
<td>18.83</td>
<td>43.43</td>
<td>4</td>
<td>2.21</td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>4.29</td>
<td>3.85</td>
<td>3.76</td>
<td>3.11</td>
<td>3.80</td>
<td>59.32</td>
<td>4</td>
<td>1.13</td>
</tr>
</tbody>
</table>

* .05 level.

** .01 level.
conditions as separate demographic variables. Both variables were used in an effort to test the proposition that age of respondent and experience in the respondent's present district of employment, was not the same condition. Apparently this was the same condition for the population in this study. Since the variables appear inseparable in this study it is useless to discuss longevity as a variable. The discussion of these findings cannot be separated from the discussion of the findings for the age variable (see Age Variable). This is not to say that the stronger of the two variables is age, only that such a determination cannot be made by this study. The only determination that can be made from these data is that age and longevity did not function independently here.

Table 14 compares the perceptions of professional autonomy of elementary teachers (K-8) with that of secondary teachers (9-12). This variable turned out to be the only demographic variable which showed across the board differences.

Table 14 shows that differences in perceptions of professional autonomy were fairly constant between elementary and secondary teachers. Secondary teachers scored higher on all factors when the basic scores (a, b, and c) were considered. The c score (How much should there be?) gave a single difference; self-governance. Taken with the fact that a statistical difference existed for the (c-a) score on self-governance it appears that there is a difference of scale for this factor. Elementary
Table 14. Summary Table of ANOVA Results for the Assignment Variable

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean Score</th>
<th>Elementary ss</th>
<th>Secondary ss</th>
<th>df</th>
<th>F Ratio</th>
</tr>
</thead>
<tbody>
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<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Independence</td>
<td>a</td>
<td>15.08</td>
<td>17.11</td>
<td>154.69</td>
<td>13.85**</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>15.10</td>
<td>16.43</td>
<td>237.73</td>
<td>17.924**</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>18.96</td>
<td>19.15</td>
<td>32.71</td>
<td>1.54</td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>2.88</td>
<td>2.04</td>
<td>93.95</td>
<td>10.92**</td>
</tr>
<tr>
<td>2. Status</td>
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<td>13.80</td>
<td>14.44</td>
<td>58.97</td>
<td>3.19</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>12.84</td>
<td>13.89</td>
<td>136.23</td>
<td>7.39**</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>18.68</td>
<td>18.84</td>
<td>3.01</td>
<td>0.66</td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>4.87</td>
<td>4.40</td>
<td>35.35</td>
<td>2.17</td>
</tr>
<tr>
<td>3. Self-Governance</td>
<td>a</td>
<td>9.05</td>
<td>10.15</td>
<td>174.32</td>
<td>13.01**</td>
</tr>
<tr>
<td></td>
<td>b</td>
<td>8.09</td>
<td>9.13</td>
<td>230.06</td>
<td>20.07**</td>
</tr>
<tr>
<td></td>
<td>c</td>
<td>15.84</td>
<td>16.90</td>
<td>140.65</td>
<td>13.30**</td>
</tr>
<tr>
<td></td>
<td>(c-a)</td>
<td>6.80</td>
<td>6.76</td>
<td>1.81</td>
<td>0.12</td>
</tr>
<tr>
<td>4. Responsibility</td>
<td>a</td>
<td>14.09</td>
<td>15.94</td>
<td>489.88</td>
<td>33.806**</td>
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<tr>
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<td>b</td>
<td>14.08</td>
<td>14.76</td>
<td>632.14</td>
<td>43.32**</td>
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<td>18.59</td>
<td>18.81</td>
<td>7.47</td>
<td>1.73</td>
</tr>
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<td>(c-a)</td>
<td>4.50</td>
<td>2.88</td>
<td>376.40</td>
<td>28.59**</td>
</tr>
</tbody>
</table>

**.01 level.
teachers perceived the need for less self-governance than did secondary teachers. They perceived less at present (score a) and less three years ago (score b).

For the status factor somewhat different findings were obtained. Elementary teachers perceived significantly less status three years ago than did secondary teachers. No differences were found for the other three scores of the status factor.

For the factors of independence and responsibility the findings were similar. In each case secondary teachers perceived that there should be as much of each factor as did elementary teachers. Secondary teachers perceived higher levels of each factor at present and higher levels three years ago. There is a statistical difference in their perceptions of the difference score (c-a). This can only be due to the significance found by comparing score a.

The two groups show significantly different perceptions of how much independence and how much responsibility presently exist and have existed in the near past but do not differ in perceptions of how much there should be. Elementary teachers have lower scores and the ideas of Charters (1963) and Vogt (1970) are clearly supported by these findings. The results on these two factors of professional autonomy also tend to support the findings of Allutto and Belasco (1972) and may be taken to support their contention of deprivation of decision making at the elementary level of assignment.
Certainly this is an area for more research. The suggestion that there is a difference of kind between elementary and secondary teachers relative to their perceptions of professional autonomy speaks directly to the nature of the educative process and perhaps to the development of students in our system of education.

Table 15 shows the results of the investigation of the relationship between teacher perceptions and teacher income. It is not amount of income that is the question, but whether the teaching income of the respondent is the primary income for the teacher's family or a secondary income.

Table 15 shows that there were no differences in perceptions of professional autonomy that could be related to the respondent teacher being the primary or a secondary wage earner for the family. This finding may be explained by various circumstances surrounding present day teachers.

One facet of the primary versus secondary income finding that might be explored is its relationship to sex difference. The finding of this study shows that the major difference between teachers when they were compared by sex was in the area of perceptions of self-governance. The single exception, where no difference in self-governance occurred, was for perceptions of how much self-governance there presently is (score a). The sexes did not differ for any of their perceptions of autonomy factors on score a. This may be an outcome of major strides by women in our
### Table 15. Summary Table of ANOVA Results for the Income Variable

<table>
<thead>
<tr>
<th>Factor</th>
<th>Score</th>
<th>Primary</th>
<th>Secondary</th>
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<th>df</th>
<th>F Ratio</th>
</tr>
</thead>
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</tr>
<tr>
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<td>0.30</td>
</tr>
<tr>
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<tr>
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<td>1</td>
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</tr>
<tr>
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</tr>
<tr>
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</tr>
<tr>
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<td>13.40</td>
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</tr>
<tr>
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</tr>
<tr>
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<td>9.44</td>
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</tr>
<tr>
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</tr>
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<td>6.47</td>
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</tr>
<tr>
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</tr>
<tr>
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<td>13.24</td>
<td>2.79</td>
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</tr>
<tr>
<td></td>
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<td>18.63</td>
<td>0.73</td>
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<td>0.17</td>
</tr>
<tr>
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<td>(c-a)</td>
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<td>3.88</td>
<td>9.59</td>
<td>1</td>
<td>0.73</td>
</tr>
</tbody>
</table>
schools and may be traceable to the sexless salary schedule as an early instance of equality. For teachers married to other teachers this sexless salary schedule negates the concept of primary and secondary incomes for the family.

Another possible explanation would be the effect of teachers having a single income family. Single income may occur in young families where the wife is still child bearing or in single parent families. The United States Census Bureau report of 1975 showed that the single parent household is on the rise, and it is likely that teachers as a group contribute as much to this statistic as any other group in the United States. Lieberman and Moskow (1966) set the rate of married women teachers at 57%.

Certainly more research is necessary to obtain an idea of the effects of teacher equality upon the income structure of the teacher's salary. For this study there are two facts that stand out. One is that sex and primary or secondary incomes do not appear to co-function. The second is that teaching income when thought of as primary or secondary to the teacher's family may not be a useful variable under present economic conditions.

Table 16 gives results of comparison by affiliation with professional organizations. The variable was divided into those teachers affiliated with the AFT, NEA, or having no organizational affiliation.
Table 16. Summary Table of ANOVA Results for the Organizational Affiliation Variable

<table>
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<tr>
<th>Factor</th>
<th>Score</th>
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<th>AFT</th>
<th>None</th>
<th>ss</th>
<th>df</th>
<th>F Ratio</th>
</tr>
</thead>
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<td>16.81</td>
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<td>2</td>
<td>0.77</td>
</tr>
<tr>
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<td>b</td>
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</tr>
<tr>
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<td>19.08</td>
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<td>0.02</td>
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<tr>
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</tr>
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<tr>
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<td>8.36</td>
<td>182.93</td>
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<td>0.19</td>
</tr>
</tbody>
</table>

* .05 level.
** .01 level.
The organizational affiliation of teachers was found to have little relationship to the perceptions of professional autonomy of teachers in this study. The finding that AFT affiliated teachers perceive a lesser degree of self-governance at present and during the last three years is the only result of note. That there is no organizational affiliation difference for how much self-governance there should be sets the stage for the general statement that AFT teachers may be less satisfied than NEA teachers with recent progress toward the agreed upon level of self-governance.

In 1975 the NEA estimated its teacher membership to be 1,200,000. The AFT membership for 1975 was approximately 375,000 teachers. These national membership figures show the AFT to hold approximately 23.8% of organized teachers in the United States. The population in this study did not replicate the national percentage ratios (White 1976).

The AFT affiliated respondents in this study were relatively few in number. Only 36 of the total n of the study reported AFT affiliation, and unaffiliated teachers, with an n of 87, were more common in the study population than were AFT members. Such a disparity of n makes any result suspect. This study found that AFT members comprised less than 6% of the population obtained in the three western states sampled. The only finding that can be made for this variable is that the AFT is not strong in the states of California, Arizona, and Nevada as measured by this sample.
Table 17 shows data for the Educational Administration course work completed variable. Divisions were 1-5 hours, 6-10 hours, 11-15 hours, 16-20 hours, and 20 or more hours completed by the individual teacher. Table 17 is the ANOVA summary table. Because there was only a single significance obtained, a t-test was not constructed. The t-test figures are given in the body of the discussion.

A single significance was obtained for the variable of amount of course work in Educational Administration. The score that signifies how much status there was three years ago shows a measurable difference between respondents having 16-20 hours of Educational Administration course work and those having 20 or more hours.

The t obtained by comparing the mean scores of these two subgroups was -2.94 for 88 degrees of freedom. This is significant beyond the .05 level. Such minimal differences in results (1 significance of a possible 128 comparisons) must be considered as a statistical artifact. This variable has no apparent relationship to perceptions of professional autonomy as described in this study.

Table 18 displays the ANOVA results for the variable of formal training in negotiation theory and practice. This was of interest mainly because very little work has been reported on the variable.
Table 17. Summary Table of ANOVA Results for the Educational Administration Course

<table>
<thead>
<tr>
<th>Factor</th>
<th>Score</th>
<th>Mean</th>
<th>0-5</th>
<th>6-10</th>
<th>11-15</th>
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<th>df</th>
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</tr>
</thead>
<tbody>
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<td>13.94</td>
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<td>3. Self-Governance</td>
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* .05 level.
Table 18. Summary Table of ANOVA Results for Negotiation Training Variable

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<th>df</th>
<th>F Ratio</th>
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</tr>
<tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
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<td>14.06</td>
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**.01 level.
The demographic variable of negotiation training has only a single statistically significant result. Those respondents with formal training in negotiation perceived a higher degree of how much self-governance there should be than did those without formal negotiation training.

No real importance can be attached to such a meager result, which may be caused by a disparity of n. One hundred-eleven of the respondents reported that they had negotiation training, while 517 reported they did not. The only reportable finding here is that approximately one of every six teachers in the population surveyed had had formal training in the theory or methods of collective negotiation.

Summary

The results of this study point to only two variables having a relationship to perceptions of professional autonomy. Those variables were the major variable of state of residence and the demographic variable of level of assignment. Tables 3 through 6 related to the "state" variable and show consistent differences between perceptions of California based teachers and teachers employed in Arizona or Nevada. Results from comparisons of Arizona and Nevada teachers are less consistent and are not as widespread. The results of the Arizona-Nevada comparisons do not appear to allow any general statement about professional autonomy but instead must be considered at the factor and score level due to their inconsistency. The results of the comparisons between
California and each of the other states support the statement that California based respondents perceive higher degrees of professional autonomy than do the teachers sampled in Arizona or Nevada. Due to the fact that Nevada and California both have statutes authorizing collective negotiation, it appears that length of time since passage of such a statute is the condition that contributed most to the results obtained in this study.

The level of assignment was divided between elementary and secondary teaching. A definite relationship between level of assignment and perception of professional autonomy was established in this study. Secondary teachers in the study perceived higher degrees of independence, self-governance, and responsibility than did elementary teachers. The results for the status factor were in general not significantly different for these two groups. These findings suggest that secondary teachers perceive themselves to have higher degrees of professional autonomy than do elementary teachers.
CHAPTER 5

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The purpose of this study was to describe possible relationships between state level negotiations laws and elapsed time since their passage upon the perceptions of professional autonomy of teachers. The three states of Arizona, California, and Nevada were chosen as representative states. These states vary with respect to the existence or explicitness of statutes that govern educational collective negotiation and with respect to the elapsed time since passage of regulatory statutes.

Arizona had no statute; California at the time of data collection had a rather inexplicit statute, and Nevada had more explicit statutes than California.

These three states also vary with respect to elapsed time since passage of legislation authorizing educational collective negotiation. Arizona presently has no law and no elapsed time. California enacted the Winton Act in 1965 and Nevada the Local Government Employee-Management Relations Act in 1971.

Ten demographic variables were inspected as pertinent to this study as a means of control. They were:
1. Location of district
2. Size of district
3. Age
4. Sex
5. Longevity
6. Assignment level
7. Income (primary versus secondary)
8. Organizational affiliation
9. Educational Administration course work
10. Negotiation training

All of these variables have face validity for a descriptive study of perceived professional autonomy within varying conditions of collective negotiations.

The design of this study was a treatment by blocks design. Statistical procedures of analysis of variance and t-test were used to organize and inspect the data. Analysis of data showed clear differences between states. Differences between perceptions of professional autonomy by teachers in California when compared with teachers living in Arizona and in Nevada were pronounced. Differences between teachers in Arizona and Nevada were not so great.

The single demographic variable that showed differences of a magnitude to be noteworthy in a "pre-experimental" study was the variable of assignment level. Elementary and secondary teachers differed in their perceptions of professional autonomy
irrespective of state of residence. Isolated factor differences were obtained for other demographic variables, but with such a low frequency that no conclusions could be reached and no pattern suggested.

Conclusions

The conclusions of this study were based on the results of statistical analysis of data collected from 628 teachers in Arizona, California, and Nevada during April and May of 1975. The respondent teachers were a stratified random sample of teachers in these states. Keeping in mind the limitations and the fact that this study was designed to be descriptive in nature, the following conclusions were drawn:

1. A definitive difference exists between the perceptions of professional autonomy of teachers when state of residence is the variable analyzed.

2. Obtained differences on the state of residence variable reflect elapsed time since passage of negotiations law rather than the explicit or inexplicit nature of the law. The relationship found was that the longer the elapsed time since enactment of a negotiations statute the more professional autonomy teachers perceive.

3. This study supports the notion that items of professional autonomy tend not to be among those items bargained immediately after passage of a negotiations law.
4. A difference exists in the perceptions of professional autonomy of elementary and secondary teachers. Higher degrees of professional autonomy are perceived by secondary level teachers.

5. The following variables were not found to have a strong relationship to teacher perceptions of professional autonomy:
   a. Location (urban versus rural) of the district
   b. Size of the district
   c. Age of teacher
   d. Sex of teacher
   e. Longevity of teacher
   f. Income (primary or secondary for family) from teaching
   g. Organizational affiliation of teacher
   h. Educational Administration course work taken by teacher
   i. Negotiations training of teacher

Implications

The following implications are suggested by the conclusions and by the data analyzed for variables where no conclusion is possible.

1. The time of professional item negotiation to the point where effects are perceived by teachers is probably more than three years.
2. A generalized time line may exist for the inclusion of professional autonomy items in the collective negotiation history of a state or district.

3. The lack of extensive differences on demographic variables implies a solidarity and equality of teachers with respect to their perceptions of professional autonomy.

4. The obtained differences between elementary and secondary teachers appear to be more related to differences in school organizations and conditions of work than differences in teachers themselves or in negotiation practices.

5. Inspection of the pattern of responses from Arizona and Nevada respondents implies that the initiation of formal negotiations affects teachers' perception of status and responsibility factors. The implication here is that teachers involved in working under a negotiations law feel less status and less responsibility than they previously felt. This may be due to problems in orienting themselves within the structure of the teacher organization that negotiated for them as well as within the structure of the school system. Individual teachers may feel a loss of power to structure their status and responsibility relationships until the parties of the negotiation structure establish formal relationships.
Recommendations

Further study of professional autonomy of teachers under a more controlled design should be carried out if the relationship between negotiation and professional autonomy is to be better understood. It is suggested that studies in the following areas might promote useful information:

1. The equation of elapsed time since passage of the negotiations law. A number of states passed laws in 1965. The conclusion of importance of elapsed time could be readily checked by matching times. It might be appropriate to establish a detailed time line for increase in perceptions of professional autonomy and negotiation of items related to professional autonomy.

2. Close inspection of negotiation statutes might permit assignment of an "explicitness value" to any state's law. Laws with different values could then be used as a more precise variable in a study similar to this one.

3. Evaluation of negotiations practice at the district level to determine how integrative or distributive negotiation practices might affect perceptions of professional autonomy.

Further investigations into the source of differences in perceptions of professional autonomy by elementary and secondary teachers might also provide useful information. For example, is the basis of these differences philosophical, bureaucratic, or
student need related? Are there predisposing differences in the educative process of elementary and secondary teachers? Is the difference simply related to the greater continuity of program expected of the grade level oriented elementary school as opposed to the subject level oriented secondary school? These questions and others flow naturally from the findings of this study.

A final recommendation is that negotiators for both administration and teacher organizations reconsider negotiation strategies. An optional strategy for structuring the roles and relationships of the early years of negotiation appears to be more emphasis on "professional" items. This might cost teachers some loss of money items and administrators some management prerogative, but it might also be a means of more productive negotiations in the first few years of bargaining.
APPENDIX A

PILOT STUDY QUESTIONNAIRE

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Dear Teacher,

A study is being carried out at The University of Arizona that attempts to investigate the relationship between certain teacher characteristics and autonomy of teachers. This study will poll over 1,000 teachers in a three state area and is concerned with urban and rural differences, large and small school differences and differences in negotiation laws as its three main variables. Your school district is of a size and location that makes it a good district to poll.

The district administration has given The University of Arizona permission to use this poll in your school district. A random selection of teachers being asked to respond to this questionnaire has been carried out and your name was one of those selected. Please assist this study by giving approximately ten minutes of your time to fill out the accompanying questionnaire, and returning it to The University of Arizona in the envelope furnished.
Individual Data Sheet

Please circle one of the options underlined in each item to indicate your personal circumstances.

1. Age 20-29 30-39 40-49 50-59 60 or above

2. Sex Female Male

3. I have been a teacher in this district for
   1-5 6-10 11-15 16-20 20 or more years.

4. My teaching assignment in this district is:
   elementary K-8 Secondary 9-12

5. My teaching income is the primary secondary income for my family.

6. The teacher organization I am a member of is affiliated with the:
   NEA AFT neither

7. The number of hours of college level classwork I have had in
   Educational Administration courses is:
   0-6 7-12 13-18 19-24 25 or above

8. I have have not had formal training, (workshops, class, etc.) in collective negotiations.

Please do not sign this sheet or the questionnaire to follow. The code blank in the upper right corner will be used only to record the state your district is located in, whether your district is urban or rural, and whether your district is a large or small district.

THANK YOU!
INSTRUCTIONS FOR QUESTIONNAIRE

On the following 3 pages are several characteristics or qualities connected with teaching positions. For each of these qualities you are asked to give three ratings.

a. How much of the quality is there now connected with your teaching position?

b. How much of the quality was there connected to your teaching position three years ago?

c. How much of the quality should there be connected with your teaching position?

The ratings are arranged in the manner shown below:

a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

Please circle the number from 1 to 7 that best represents your perception of the amount of characteristic or quality connected with your teaching position.

Low numbers represent low or minimum amounts and high numbers represent high or maximum amounts.
QUESTIONNAIRE

1. The opportunity, in my teaching position, for participation in the setting of goals.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

2. The opportunity for determining the objectives of my teaching assignment.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

3. The opportunity, as a teacher, to use my discretion in dealing with the problems of my students.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

4. The opportunity, in my teaching position, for participation in the determination of methods and procedures.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

5. The degree to which my fellow teachers value economic gain over service to students.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)
6. The power teachers in my district have to negotiate the salary schedule.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

7. The acceptance of my judgment concerning the proper materials to use in my classroom.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

8. The opportunity for independent thought and action in my teaching position.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

9. The responsibility I have as a teacher for intellectual pursuits to improve my teaching.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

10. The amount of responsibility I feel to take action concerning unprofessional acts by another teacher.
    a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
    b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
    c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

11. The opportunity I have as a teacher to determine my schedule of class assignments and free periods.
    a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
    b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
    c. How much should there be? (min) 1 2 3 4 5 6 7 (max)
12. The degree to which teachers of a department or school are consulted in the employment of new teachers for that department or school.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

13. The authority connected with my teaching position.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

14. The opportunity to determine the methods of teaching that best serve my classes and individual students.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

15. The freedom I have to interact as a professional with my administrator.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

16. The opportunity my teaching position offers for meeting my individual educative purposes for my students.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

17. The opportunity afforded me as a teacher in meeting the total needs of my school.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)
APPENDIX B

SURVEY QUESTIONNAIRE
Dear Teacher,

A research study is being carried on at the University of Arizona that attempts to investigate the relationship between certain teacher characteristics and the professional autonomy of teachers. The study will poll over 1,000 teachers in a three state area and is concerned with urban and rural differences, large and small school differences, and differences in state level law pertaining to negotiations as its three main variables. Your school district is of a size and location that makes it a good district to furnish representative data for this type of research.

The district administration has given permission to use this poll in your school district. Random selection of teachers being asked to respond to the attached questionnaire has been carried out and you were one of those selected. Please assist this study by giving approximately ten minutes of your time to fill out the accompanying questionnaire and returning it in the envelope provided.

Thank you.

Merl Sarber
Research Asst.
Respondent Data Sheet

Please circle one of the options underlined in each item below to indicate your personal circumstances.

1. Age 20-29 30-39 40-49 50-59 60 or above

2. Sex Female Male

3. I have been a teacher in my present district for
   1-5 6-10 11-15 16-20 21 or more years

4. My teaching assignment in my present district is
   elementary (K-8) secondary (9-12)

5. My teaching income is the primary secondary income for my family.

6. The teacher professional organization I am a member of is
   affiliated with the NEA AFT neither

7. The number of hours of college level classwork I have had in Educational Administration courses is
   0-6 7-12 13-18 19-24 25 or above

8. I have not had formal training, (workshops, class, etc.) in collective negotiations.

Please do not sign this sheet or the questionnaire to follow. The code blank in the upper right corner will be used only to record the state your district is located in, whether your district is urban or rural, and whether your district is a large or small district.

THANK YOU!
INSTRUCTIONS FOR QUESTIONNAIRE

On the following two pages are several characteristics or qualities connected with teaching positions. For each of these characteristics or qualities you are asked to give three ratings.

a. How much of the characteristic or quality is there now connected with your teaching position?

b. How much of the characteristic or quality was there connected with your teaching position three years ago?

c. How much of the characteristic or quality should there be connected with your teaching position under ideal conditions?

The ratings are arranged in the manner shown below.

a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

You are to make your ratings on the 1 through 7 scale according to your perceptions as they relate to the district in which you presently teach. Please circle the number from 1 through 7 that best represents your perception of the amount of characteristic or quality connected with your teaching position.

Low numbers represent low or minimum amounts and high numbers represent high or maximum amounts.
1. The responsibility I have as a teacher for intellectual pursuits to improve my teaching.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

2. The amount of responsibility I feel to take action concerning unprofessional acts by another teacher.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

3. The degree to which teachers of a department or school are consulted in the employment of new teachers for that department or school.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

4. The acceptance of my judgment concerning the proper materials to use in my classroom.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

5. The opportunity, in my teaching position, for participation in the determination of methods and procedures.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)

6. The opportunity afforded me as a teacher in meeting the total needs of my school.
   a. How much is there now? (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago? (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be? (min) 1 2 3 4 5 6 7 (max)
7. The opportunity, in my teaching position, for participation in the setting of district goals.
   a. How much is there now?  
      (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago?  
      (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be?  
      (min) 1 2 3 4 5 6 7 (max)

8. The freedom I have to interact as a professional with my administrator.
   a. How much is there now?  
      (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago?  
      (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be?  
      (min) 1 2 3 4 5 6 7 (max)

9. The authority connected with my teaching position.
   a. How much is there now?  
      (min) 1 2 3 4 5 6 7 (max)
   b. How much 3 years ago?  
      (min) 1 2 3 4 5 6 7 (max)
   c. How much should there be?  
      (min) 1 2 3 4 5 6 7 (max)

10. The opportunity for determining the objectives of my teaching assignment.
    a. How much is there now?  
       (min) 1 2 3 4 5 6 7 (max)
    b. How much 3 years ago?  
       (min) 1 2 3 4 5 6 7 (max)
    c. How much should there be?  
       (min) 1 2 3 4 5 6 7 (max)

11. The opportunity for independent thought and action in my teaching position.
    a. How much is there now?  
       (min) 1 2 3 4 5 6 7 (max)
    b. How much 3 years ago?  
       (min) 1 2 3 4 5 6 7 (max)
    c. How much should there be?  
       (min) 1 2 3 4 5 6 7 (max)

12. The power teachers have, in my district, to negotiate the salary schedule.
    a. How much is there now?  
       (min) 1 2 3 4 5 6 7 (max)
    b. How much 3 years ago?  
       (min) 1 2 3 4 5 6 7 (max)
    c. How much should there be?  
       (min) 1 2 3 4 5 6 7 (max)
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